WIND RIVER ANDROID PILOTS

Android has become one of the leading mobile operating systems through its openness, highly customizable features, robust ecosystem, and growing application availability. But rapid technology release cycles and growing competitive pressure make it difficult to meet time-to-market windows, add differentiating functionality, ensure user experience and quality, and control development costs. Wind River® understands these challenges and is dedicated to helping our customers build leading-edge Android-based products in this dynamic and competitive environment.

Wind River Android pilots are Wind River–authored or integrated third-party Android technology components designed to extend Android Open Source Project features. The pilots are developed to a demonstration level covering limited use cases and can be augmented to product-quality or project-specific requirements by the customer or by Wind River Professional Services. These software components include validated applications and middleware components that are combined with specialized innovation design, consulting, industrial standard compliance, and comprehensive life cycle services.

SECURITY ENHANCED ANDROID

Security Enhanced (SE) Android is a project to identify and address critical gaps in the security of Android. Released by the National Security Agency, it consists of a Linux kernel and Android user space modifications. Wind River enhances SE Android by implementing additional features to remove vulnerabilities and allow more specialized policy for a given usecase, including the following:

- Semi-custom policy for downloaded applications
- Restricted privileges as demanded by most enterprises and IT organizations
- Code extensions to support standard Android drivers
- Initial security policies with Android Compatibility Test Suite (CTS) and Wind River Framework for Automated Software Testing (FAST) for Android

SE Android was released with a reference implementation to open source, and the Wind River enhancements can help fill the gaps between that release and the requirements of a commercial product.
LIGHTWEIGHT PARTITIONING
As an operating system, Android is designed for a single domain where any installed application equally shares system resources, limiting the flexibility of reusing the device for multiple purposes. The majority of existing solutions rely on virtualization with guests corresponding to different protected domains, typically causing significant overhead and complications whenever there is a need to share hardware resources. Lightweight partitioning is a security isolation strategy that provides two or more encrypted partitions where data can be kept safe and secure between them. For example, a project team sharing a tablet can set up multiple users. Or one partition can be set up to secure personal information, and another to secure corporate information. Each partition is uniquely encrypted, so a lost device only exposes one partition of data.

SECURE BOOT
Secure boot provides the foundation of security by verifying each stage of boot process before being executed. This mechanism allows only authenticated software and prevents malicious code from being executed. It implements a chain of trust in which every component in the boot process measures the next one; if any component fails to pass signature verification, the boot process will stop.

VIRTUALIZATION
Wind River delivers virtualization for Android with a type 1 embedded hypervisor, providing a virtualization layer that partitions a single- or multi-core chip into multiple partitions with varying levels of protection and capabilities. With a small footprint and high performance, Wind River Hypervisor offers all the benefits of embedded virtualization for Android:

• A faster and more reliable virtualization environment
• Lightweight and easy configuration and deployment on complex devices
• Secure environment separation between different operating systems, components, and applications

CONTACT
To learn more about Wind River products for Android designs, visit www.windriver.com/products/mobile/. To have a representative contact you, call 800-545-9463 or write to inquiries@windriver.com.