



Android – the first truly open and complete platform for mobile devices

Android is a new open-source platform for mobile phones. With its solid Linux foundation, a very business-friendly open-source license and an easy-to-use Java programming model, it provides a perfect basis for mobile applications – and beyond. As part of the Open Handset Alliance that guides Android's evolution, Noser Engineering AG contributed functionality to the core platform.

«Android is the first truly open and comprehensive platform for mobile devices. It includes an operating system, user-interface and applications – all of the software to run a mobile phone, but without the proprietary obstacles that have hindered mobile innovation. We have developed Android in cooperation with the Open Handset Alliance, which consists of more than 30 technology and mobile leaders including Motorola, Qualcomm, HTC and T-Mobile. Through deep partnerships with carriers, device manufacturers, developers, and others, we hope to enable an open ecosystem for the mobile world by creating a standard, open mobile software platform. We think the result will ultimately be a better and faster pace for innovation that will give mobile customers unforeseen applications and capabilities.»

Andy Rubin

Director of Mobile Platforms at Google, official Google Blog entry
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NOSER ENGINEERING AG WINTERTHUR | LUZERN | BERN | MÜNCHEN

RUDOLF-DIESEL-STRASSE 3
CH-8404 WINTERTHUR
TEL +41 52 234 56 11

PLATZ 4
CH-6039 ROOT D4
TEL +41 41 455 66 11

GALGENFELDWEG 18
CH-3006 BERN
TEL +41 31 917 45 11

BERNABEISTR. 1
C/O STEUERKANZLEI SCHNEIDER GERALD
DE-80639 MÜNCHEN
TEL +41 52 234 56 11

WWW.NOSER.COM
INFO@NOSER.COM



The Project

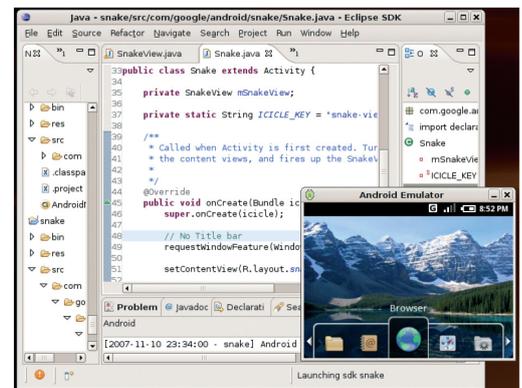
As part of the Open Handset Alliance and on behalf of Google, Noser Engineering AG contributed the larger part of the so-called «Android core libraries». These are basically a set of libraries that provide most of the functionality typically found in desktop implementations of the Java programming language, but adapted to and optimized for a mobile device.

The Benefit

Android provides a complete software stack for mobile phones and will be made available via the Apache v2 license. Although the system is based on Linux, application development happens in the Java programming language. The system comes with a powerful new application framework and a set of built-in applications. To leverage the reuse of existing code and knowledge, Android supports a subset of the Java class libraries known from the desktop. This includes packages in the typical java.* and javax.* namespaces.

The Implementation

These days no large software system is written from scratch and Android is no exception. Instead of reinventing the wheel, Android builds on many existing, proven open-source solutions. The class libraries that Noser developed are partially a part of Apache Harmony. Packages close to the virtual machine had to be rewritten specifically for Android, while some others were optimized for the resource-constrained mobile device. In the latter case, native libraries like IBM's ICU (for localization) or OpenSSL (for security) were wrapped using JNI. The complete porting and integration was done in an agile manner with many intermediate deliveries, allowing quick adjustments to early feedback and requirements changes, as well as close collaboration with Google.



The Technology

On the tool side, Ubuntu 6.06 Linux was used as our primary development system and Eclipse was the IDE of choice. Subversion was employed for version management with Trac being used for repository browsing, issue tracking, and storing general project-related information in a Wiki. For quality assurance, CruiseControl, FindBugs and PMD were employed. Each check-in triggered a build and test run on a dedicated server, with the results being immediately visible to all project members.

The Result

With a highly skilled team of both internal and external experts Noser Engineering AG managed to deliver a subset of the Java class libraries for the Android platform. All this was done in a very competitive time frame. Java developers worldwide are now using these libraries for the development of Android mobile applications.