Sun™ Small Programmable Object Technology

Sun SPOT Open Grant Program
Request for Proposals

> ### *Help Us build the Sun SPOT Java™ Open Source community.*

Are you a professor, student, or hobbyist? Would you like to use wireless sensors in your curriculum, research or project? Join the Sun Small Programmable Object Technology (SPOT) Open Source developer community!

The Opportunity:

Recognizing the vital role that open source software contribution plays in fostering new developer communities, Project Sun SPOT is soliciting interesting proposals from creative people for wireless sensor and embedded hardware and software projects. To encourage this goal, Sun Labs will award Sun SPOT Java™ Development Kits (JDK) to the projects we think will be most effective in inspiring and expanding the Sun SPOT Open Source community.

What do we want?

Interesting code posted to http://spots.dev.java.net that inspires the Sun SPOT user community and is a basis for other great ideas, as well as your help in growing the Sun SPOT community by actively participating in Sun SPOT forums, blogs and user groups, etc. We're particularly interested in projects that are creative building blocks for future work.

Your proposal should include the following:

- Project description including why your project is a good building block for the embedded open source community
- What you plan to call your project on Java.net
- Your plan for regular updates to the community so members can follow your progress
- Description of how the community will gain access to your code and documentation
- Your project timeline
- How many Sun SPOTs you think you'll need to complete the project

The award for this program will be one or more Sun SPOT JDKs. There will be no cash grants.

Submit your proposal to sunspotproposals@sun.com. If you submit a proposal by the 15th of the month, we will respond on the 1st of the following month, and award Sun SPOT JDKs, while supplies last, to the proposals that best address the project goals.

About Sun SPOTs and the Sun SPOT JDK

The Sun SPOT hardware platform is a small, battery operated, wireless device running the Squawk Java™ virtual machine (Jvm), which acts as both operating system and software application platform and runs directly on the processor without an intervening OS. Based entirely on Java, Sun SPOTs provide a low-cost, low-power versatile platform for developing wireless sensor and embedded applications. The Sun SPOT JDK includes a complete hardware platform, the Squawk Jvm, and a set of programming tools, including the NetBeans™ IDE, so even high-level programmers can quickly write custom embedded applications. For more information, technical details, forums, news, events and to purchase a Sun SPOT JDK, visit http://www.sunspotworld.com/

Sun SPOT Specifications

Project Sun SPOT is an ongoing Sun Labs research project. All specifications and features are subject to change without notice. A Sun SPOT device is built by stacking a Sun SPOT processor board with a sensor board and battery.

Hardware:

Sun SPOT Processor Board

180 MHz 32 bit ARM920T core - 512K RAM/4M Flash
2.4 GHz IEEE 802.15.4 radio with integrated antenna
USB client interface
3.7V rechargeable 750 mAh lithium-ion battery
32 µA deep sleep mode

General Purpose Sensor Board

| |
|---|
| 2G/6G 3-axis accelerometer |
| Temperature sensor |
| Light sensor |
| 8 tri-color LEDs |
| 6 analog inputs |
| 2 momentary switches |
| 5 general purpose I/O pins and 4 high current output pins |

Software:

Squawk Java™ virtual machine

Fully capable J2ME™ CLDC 1.1 Java VM with OS functionality
VM executes directly out of flash memory
Device drivers written in Java
Automatic battery management

Developer Tools

Use standard IDEs. e.g. NetBeans™, to create Java code
Integrates with J2SE™ applications
Sun SPOT wired via USB to a computer acts as a base-station
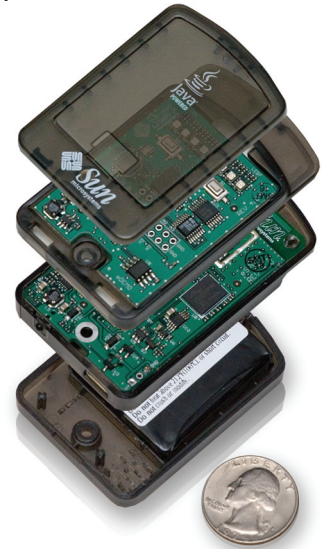
Sun SPOT Java Development Kit

- Two full Sun SPOTs with eDemoSensor boards and batteries
- One Sun SPOT base-station
- Example code/tutorials
- Squawk Java virtual machine
- Java SDK with source code
- NetBeans
- USB cable
- Two wall mounts
- One PC board mount
- Software Emulator
- Modular design to encourage custom HW development

To purchase a Sun SPOT visit SunSPOTWorld.com: http://www.sunspotworld.com/products

About Sun Labs

Established in 1990, Sun Microsystems Laboratories is the applied research and advanced development arm of Sun Microsystems, Inc., with locations in California and Massachusetts. Sun Labs is one of the ways Sun invests in the future, and is responsible for many of the technology advancements that have made Sun a technology powerhouse—including asynchronous and high-speed circuits, optical interconnects, 3rd-generation Web technologies, sensors, network scaling and Java technologies.