BUG LABS + HEALTH

Fact Sheet

What is BUG?

The BUG platform is a Lego-like product development solution that enables innovators to very quickly and easily develop custom, personalized devices.

The picture above shows how BUGmodules are snapped into BUGbase, a handheld, Linux-based core that serves as the brain of a device. BUGmodules are electronic blocks that extend the device's functional capabilities. Here, a 2MP camera and audio module is combined to produce, for example, a voice-controlled camera system.

Available BUGmodules

- Full-color LCD touchscreen
- Advanced breakout module
- SiRF chipset-based GPS
- Low-power 802.15.4 radio (IEEE)
- 3G GSM and CDMA modem
- Motion detector/accelerometer
- ...and more

About Bug Labs

Bug Labs is a team of technologists whose mission is to redefine the way we traditionally approach product development. We believe the product development process can be made faster, cheaper, better quality, and lower risk, and are committed to putting innovation and control back in the hands of users.

There are so many great gadget ideas that haven't been thought of yet. With BUG, we want to unlock and inspire the discovery and creation of as many of these devices as possible.

Why Use BUG?

- Bring prototypes to production twice as fast at half the cost using BUG's device development methodology
  - ‣ Focus on building the unique features of your device on top of a proven and certified base platform (FCC & CE)
  - ‣ Duplicate the success of your device prototype to a few thousand clone devices in no time

- Discover award-winning technology at your fingertips
  - ‣ BUGs are mobile, battery-powered Linux cores + solid-state storage that support hot-swappable BUGmodules
  - ‣ Software development toolchain utilizes industry standards like Linux, Java and the Eclipse IDE

- Leverage pre-built, standard hardware interfaces and wireless protocols to create your custom, personalized device
  - ‣ Take your pick among Bluetooth, WiFi, ZigBee, and 3G GSM or CDMA wireless communication standards
  - ‣ Integrate hardware using any combination of RS-232 serial UART, I2C, I2S, GPIO, SPI, USB 2.0, ADC/DAC, and more

- Sidestep IP hassles and proprietary technology lock-in by leveraging open source nature of BUGs
  - ‣ From the start, the BUG platform was built from the ground up using open source technologies
  - ‣ Choose among one of our pre-built BUGmodules, customize one to fit your needs or create your own

- Online documentation and IRC technical support come standard; custom BUG development services also available
  - ‣ Engage BUG's active open source community in an IRC chat room or browse our wikis and forums for answers
  - ‣ Need an expert? BUG offers custom design and development services to meet your individual needs

Contact Details

ENTERPRISE SALES	WEBSITE	E-MAIL
Mike de Senna +1 212 792 6357 x107	buglabs.net/health	mike@buglabs.net

Case Study: On-Demand, Remote Healthcare Diagnostics

Real-time, Remote Healthcare Diagnostics

- ☑ 3G Wireless-Enabled
- ☑ Portable
- ☑ Blood Sugar Level
- ☑ Weight
- ☑ Heart Rate
- ☑ Blood Pressure
- ☑ Oxygen Level

Left: With BUG, you can use a standard web browser to pull patient diagnostics data remotely on demand and in real-time over the Internet.

Background

Perhaps no industry represents as much opportunity for improvement as healthcare does. Conventional workflows, paperwork and widespread inefficiencies have all given rise to the vast potential that technology can have for this sector and for the public at large. Everything from electronic medical records to hospital patient tracking to remote healthcare diagnostics, the brightest minds and enterprises are working hard and fast to solve these problems first.

The Challenge

Remote patient monitoring is a game-changing service for the future of the healthcare industry, and Bug Labs is taking the lead by demonstrating ready-to-go solutions that address these tough challenges. Bug Labs is collaborating with industry leaders to proactively develop real-time, on-demand remote medical diagnostics service, a huge leap forward for the healthcare industry. The Bug Labs mission is to help customers build and commercialize integrated solutions that solve tough, real-world problems that are not currently addressed by market offerings.

The Solution

Bug Labs develops BUG, the world's first modular, wireless product development platform.

The BUG solution gives physicians the ability to monitor patients remotely using a variety of devices that measure blood sugar level, weight, heart rate, blood pressure and oxygen level. This particular configuration utilizes a Linux-based BUG core - that comes standard with WiFi and Bluetooth - along with a 3G modem. Medical devices and sensors connect wirelessly to the Internet through a BUG equipped with a 3G modem. This system - where data is received, parsed and dispatched to a web portal - illustrates how BUG technology can enable healthcare providers to quickly and easily enhance patient care.

BUG allows customers to develop, test, and manufacture custom devices that can link to cloud services in just one to two months, without the need for expensive engineering at the electronics or operating system level. Customers are free to concentrate on understanding customer needs and workflow at the front end, while the Bug Labs team handles functionality at the device level.

BUG thus enables businesses to focus on what they do best... generating profitable, marketable solutions. BUG's Healthcare Solutions allow customers to market, develop and deploy managed services quickly and cost-effectively.

Opportunities

Clearly, the Bug Labs device as a wireless, mobile computing platform for healthcare presents exciting possibilities. What will you build? The opportunities abound. Here are some ideas to get you started:
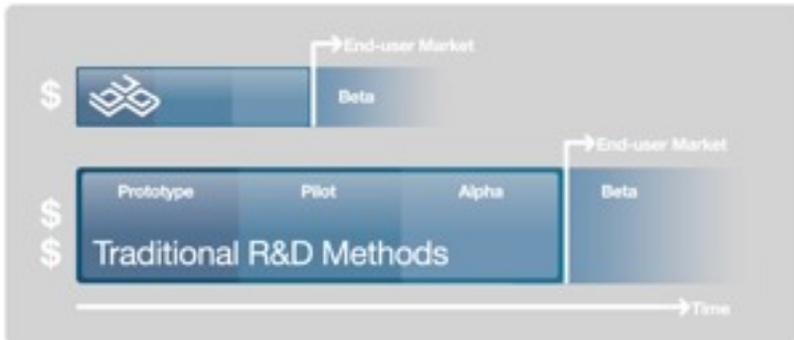
- Healthcare diagnostics data collection and analysis
- Healthcare vitals SMS/e-mail alert system
- Digital assistant for Alzheimers patients
- Patient tracking within hospitals to improve efficiency
- Portable and cost-effective medical instrumentation
- Biometric signature identification system

bug labs
buglabs.net/health

BUG Platform Advantage - Fast, low-cost prototype to production

The BUG product development system delivers immediate value by allowing users to rapidly prototype and pilot useful device types efficiently. Once a design successfully completes these phases it can be brought to production quickly, using same hardware and software platform, saving considerable time and cost. This is in marked contrast to standard hardware development processes.

"Bug Labs Custom Services is a suite of design, development, and support services centered on helping customers during any stage of the product development lifecycle. Our goal is to allow businesses and individuals focus on what they do best - innovation - while we take care of the hassle associated with bringing ideas to market.

Services include research, design, development, packaging, production, testing, logistics and marketing among others."

The traditional prototype-to-production process is expensive, time consuming and forces organizations to engage high cost contract manufacturers prematurely. This is especially painful if the target market is untested or if manufacturing volumes are small/uncertain. Moreover, it forces finalization of the user interface, and many other product features, before customers and partners are able to provide critical feedback.

In contrast, BUG provides significant time and cost savings. The whole system scales seamlessly from prototype to alpha/ beta pilot to production. The benefits of this approach are:

- Rapid POC (proof of concept) iterations and learning
- End-user feedback in prototyping stages
- Cost-effective pilot opportunities/Proof of Market testing
- Infrastructure testing (service delivery, web interfaces, billing, etc.) using a larger number of functional prototypes
- Comprehensive portability to CM (contract manufacturers)
- Leverage early market app knowledge with manufacturers

Bug Labs provides full product development life cycle services that help organizations maximize the benefits of the BUG platform.

- BUGsync - system/app SW upgrades (OTA optional)
- Application programming
- Application and other SW certification (flat fee, annual plan)
- Data Services – including BUGnet and Web applications
- Developer support (Gold, Platinum, Diamond level)
- Deployment support, incl. pilot and field trial management
- Training
- Coordination with partner contract manufacturers

Off-the-Shelf
Modular Hardware
1 month

Pilot/Limited Production
Semi-Custom
2 months

Full Production
Fully Custom
4-6 months