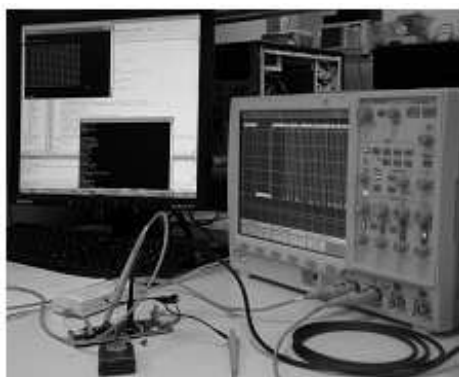


Our capabilities:

Embedded Software/Firmware



Why Choose Fidus?

At Fidus Systems, we understand the unique challenges faced by technology companies – too many projects and too few engineering resources. With top engineering talent, multiple design centers and on-site staffing options, Fidus provides highly responsive engineering teams that are an extension of your development team to successfully bring products to market faster.

Recognized as a trusted design partner, Fidus is dedicated to developing long-term relationships with clients built on integrity, quality and open communications. **With a 97% referral rate, we are proud to say our clients like our work.**

Fidus has delivered more than 800 projects for 215 clients, from Tier-1 multinationals to SMEs to start-ups. Fidus is headquartered in Ottawa, Canada with local design centers in Kitchener-Waterloo and Silicon Valley.

How Can We Help You?

Do you want to: Increase your **revenue**? Reduce your **costs**? Increase your **speed** and **flexibility**? Focus on your **core competency**?

We all do. So consider Fidus for Embedded Software Development, Staff Augmentation, and Consulting.

Fidus' Embedded Software designers have the experience, tools, and business savvy to select the most appropriate microcontroller or microprocessor and operating system, and then deliver concise, well-structured, well-documented code to you. We pride ourselves in delivering code that is easily followed, and easily supported by your team moving forward.

Fidus' Embedded Software development offerings are readily complemented by Fidus' Hardware, RF, PCB Layout, Signal Integrity/EMC, and FPGA/DSP expertise.

Design Experience

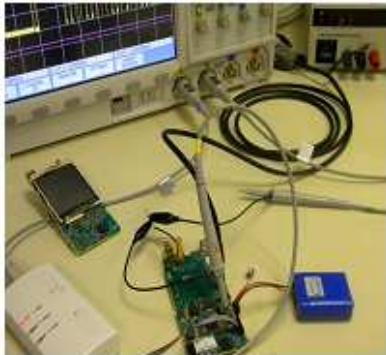
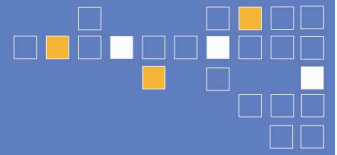
Fidus' specialists have experience with:

- 8/16-bit μ Controllers: 8051, PIC, TI MSP430, Freescale CPU12, Atmel AVR devices
- 32-bit μ Processors: Marvell, NXP, ST, DesignArt ARM™, ST ARM Cortex-M3, PowerPC, Freescale CPU32, x86, IA-32/64, MIPS
- Boot-loaders and board support packages for products and ASIC evaluation/development boards
- Device drivers for common hardware peripherals
- Development and integration of networking protocols stacks and applications
- Software porting
- Design and implementation of functional test GUIs
- Embedded operating systems including Linux, eCos, VxWorks, OSE, FreeRTOS, RTX, ThreadX
- Scripting: Tcl/Tk, Perl
- Graphics: Embedded Graphics Libraries, LCD Driver ICs
- Windows, Linux and Solaris host environments

Our Embedded Software Tools

The tools we most commonly use for our Embedded Software developments:

- **System Development:** GNU C/C++, Keil μ Vision, IAR Embedded Workbench, Freescale/Metrowerks Code Warrior, Microchip, Microsoft Visual Studio and others
- **Test Environments:** Microsoft Visual Studio, LabVIEW, MATLAB/Simulink



Contact Us

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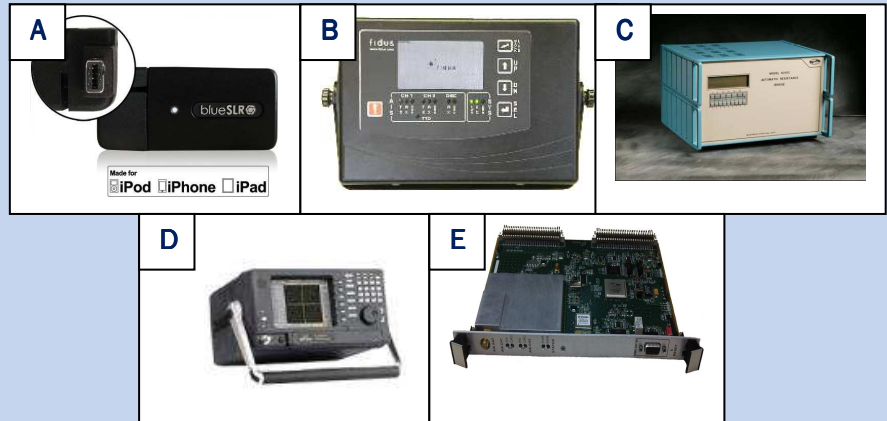
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■ ■ ■ Examples



A. Bluetooth® Accessory for Smartphones: Fidus developed the embedded firmware for a “Made for iPod. Works with iPhone and iPad” accessory that included a Bluetooth wireless interface and an 8051 microcontroller. The firmware implemented all iPhone/iPod authentication requirements as well as the higher level accessory software that interacted directly with applications running on the iPhone/iPod.

B. AIS Class B+ Transponder: Fidus delivered a complete turnkey software solution for a Marine AIS transponder device. Designed around an ARM9™ System-on-a-Chip, the software effort included a custom boot-loader, the complete board support package as well as all embedded application software. The final feature set incorporated a full TCP/IP networking stack, a web management interface, a 4.3” LCD display, a USB slave interface, in-system upgrades and a fully standards-compliant AIS application that supported position reporting, interrogation as well as GPS and NMEA data forwarding.

C. Software Migration from x86 to ARM™ Based Platform: Fidus ported an existing embedded software application from a legacy 8086-based platform to an ARM7™. The team needed to bring up the new hardware platform, create all of the required board support as well as port the higher level application software from the existing code base. This process included translating a series of x86 assembler files into ANSI standard C and the entire project was successfully completed in less than two months.

D. Linux Board Support for a Spectrum Analyzer: Fidus redesigned a spectrum analyzer to address RoHS and component obsolescence issues. The software team reworked the Linux board support for this analyzer to reflect the numerous hardware changes required. The updated Linux kernel image allowed for all of the legacy user-space application software to remain independent of the underlying hardware platform.

E. AIS Receiver for VME-Based Systems: Fidus delivered a custom AIS receiver solution for integration into an airborne radar and communication system. The software team retargeted its certified AIS software into this stripped down application and incorporated additional features specific to the end customer's application.