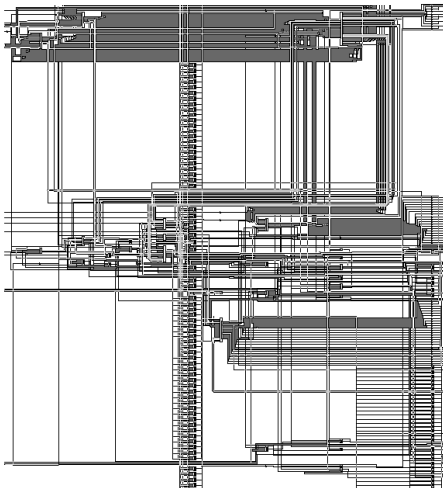




Electronic Product Development



Fidus - an excellent choice

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 meeting customer expectations, and developing long-term relationships with clients built on integrity, quality and open communications.

Fidus is pleased to provide customers with full end-to-end development solutions or more selective targeted engagements.

Fidus has delivered more than 2000 projects for 300+ clients, from Tier-1 multinationals to SMEs to start-ups. Fidus is headquartered in Ottawa, Canada with local design centers in Kitchener-Waterloo and San Jose.

high-speed, high complexity FPGA DESIGN

2016

how we Help

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 electronic product development and consulting services.

Fidus has extensive experience in designing with low-cost CPLDs up to the largest FPGAs in the world. Being a Xilinx Premier Design Services member means that we are trained and adept at selecting and implementing the most advanced Xilinx devices and tool flows.

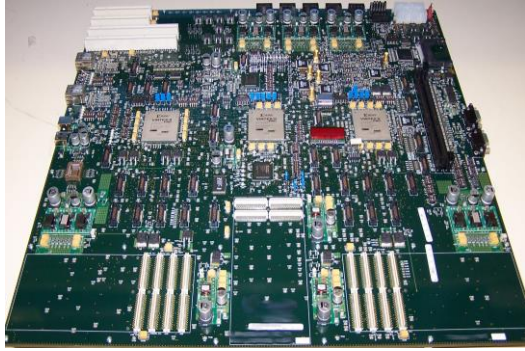
Our FPGA design team's skills are readily complemented by Fidus' Hardware, Wireless, PCB Layout, Signal Integrity, Embedded Software, and Mechanical design expertise.

design Expertise

- **Turnkey:** FPGA design, validation, and documentation solutions
- **Device selection:** Identifying the best device to get the job done
- **Device retarget:** Helping you migrate from one FPGA to another
- **Languages:** Verilog®, VHDL, SystemVerilog, HLS
- **Xilinx® advanced tool flows:** Partial Reconfiguration, HLS, IDF, AMP, SDSoc
- **ASIC-to-FPGA Conversion:** Replacing low-volume or discontinued ASICs with low cost FPGAs
- **ASIC prototyping in FPGAs:** De-risking ASIC developments by first implementing the design in one or multiple FPGAs
- **Multi-Gigabit Serial Links:** From FPGA coding to signal integrity to board layout
- **Memory Interfaces:** DDR3/4, SRAM, EMI, etc.
- **Communication Protocols:** TCP/IP, Ethernet, SONET/SDH, ATM, etc.
- **Digital Signal Processing (DSP):** Software Defined Radio (SDR), filters, echo-cancellation, 802.11 a/b/g wireless LAN, etc.
- **Video:** DVI/HDMI, image enhancement, scaling, overlay, PiP, soft-core processor engine with DDR3/DMA interfaces, etc.
- **Experience with:** Xilinx (Artix®, Kintex®, Virtex®, UltraScale, Zynq®, Spartan®, CoolRunner™), Altera and other programmable logic families

tools for High-end development

- Xilinx (Vivado®, ISE®)
- Embedded: Xilinx (ARM®, PowerPC, MicroBlaze™, Linux on MicroBlaze™, PicoBlaze™, Zynq®, bare metal, EDK/SDK)
- Simulation/Code Coverage: Questa®, ModelSim® SE, NC-Sim
- Synthesis: Synplify Pro®, Synopsys Design Compiler®
- Lab tools: Programming pods, Vivado® Logic Analyzer, ChipScope™



ALLIANCE PROGRAM
PREMIER MEMBER

bringing you Xilinx premier

As Xilinx Premier, Fidus receives exclusive training, certification, and early-access to tools, IP, and new silicon. By invitation, Fidus was *the* inaugural Xilinx Premier Design Services member in North America. So what does this mean? It means that when you hire Fidus, you know that Fidus is on the forefront of Xilinx's roadmap, experienced in the most advanced tool flows, and is top of mind within the Xilinx support network.

Examples of our work

- Video capture and distribution system. Multiple custom designed circuit cards and FPGA code.
Technologies: Xilinx® Virtex®-7, Xilinx® Vivado®, PCIe Gen3, MIPI, FMC, Image Sensor Pipeline (ISP), FMC, scaling, overlay, transceivers, GTX, Microsoft® Windows Embedded Compact 7 (CE)
- Demonstration using a Xilinx® ML605, an Avnet® HDMI FMC card, and a Panasonic® 1080p60 camera. Live video is scaled, and overlaid onto four simultaneous, independent DDR3-resident video playbacks. Building on this, we also decided to smoothly move the live video around the screen, rebounding as it nears the edge of the display; all at full high definition 1080p60 rates.
Technologies: Xilinx® Virtex®-6, Xilinx® Vivado®, Xilinx® Kintex®-7, Xilinx® MicroBlaze®, ML605, KC705, HD, 1080p60, DDR3, SODIMM, I²C, HDMI, DVI
- VME solution that adds SDR capabilities to an airborne search and rescue radar system. The center-piece of the system is a custom FPGA-based software defined radio DSP engine. The DSP algorithms were designed in MATLAB® and then moved into VHDL.
Technologies: AIS, SDR (software defined radio), Xilinx® FPGA, PowerPC® hardcore, VHF, AGC, programmable attenuators, power amplifier, VME, VITA, DO-160E, ITU M1371, NMEA0813
- We are skilled at ASIC prototyping in FPGAs. Our experience includes using the Xilinx® 2000T or multiple smaller FPGAs.
Technologies: Xilinx® Virtex®-7, Virtex-II PRO, SDRAM, PCIe, PMC, Ethernet, USB, ASIC emulation, JTAG, I²C, SPI, MICTOR
- Xilinx® Zynq® with Xilinx advanced tool flows. This project involved designing a GUI that executed AES, SHA2 and SHA3 algorithms. The algorithms were run on both bare metal, as well as the FPGA fabric. This project demonstrated Fidus' expertise with Zynq® Asymmetric Multi Processing (CPU0: Linux, CPU1: Bare Metal), High-Level Synthesis, Isolation Design Flow, and Partial Reconfiguration.
Technologies: Xilinx® Zynq®, Avnet® Zedboard, AMP, HLS, IDF, PR
- Our FPGA, SI, and layout expertise with Xilinx® high-speed transceivers makes us a one-stop shop for high-speed serial!
Technologies: Xilinx® GTX/GTH/GTZ
- HDCP Core Development – Designed, tested, and integrated, Xilinx-targeted HDCP IP
Technologies: HDCP 1.3 for DisplayPort: HDCP encryption/decryption for SST, HDCP 1.4 for HDMI: HDCP encryption/decryption for HDMI 1.4b

Locations

Ottawa Design Center

and Headquarters

375 Terry Fox Dr.
Ottawa, ON K2H 1E6 Canada
Tel: +1(613) 595-0507
Fax: +1(613) 595-1811

Kitchener-Waterloo design center

180 King Street South, Suite 505
Waterloo, ON N2J 1P8 Canada
Tel: +1(519) 576-0060

San Jose design center

927 Corporate Way
Fremont, CA 94539-6118 USA
Tel: +1(408) 217-1928

Contact Us

Central/Eastern North America

Cameron Redmond
Cell: +1 (519) 635-6835
cameron.redmond@fidus.com

Silicon Valley

Tony Andrews
Cell: +1 (408) 314-9991
tony.andrews@fidus.com

Southern California/Pacific North West

Bruce Ridley
Cell: +1 (206) 818-4701
bruce.ridley@fidus.com

Outside of North America

michael.wakim@fidus.com

www.fidus.com