Criteria for a successful Zynq® UltraScale+™ project

POWERFUL, YET COMPLEX

AMD's (Xilinx®) Zynq UltraScale+ is an impressive chip – APUs, RPUs, GPU, MACs, FPGA fabric, and a ton of other features. It is a powerful, highly flexible device that is the absolute right solution for a wide variety of applications and market. But as a wise engineer once said, "with great power comes greater complexity". This document will help open your eyes to the skills and experience needed to get your Zynq UltraScale+ based product to market fast and why Fidus should be your choice for success.

TO BE SUCCESSFUL WITH ZYNQ ULTRASCALE+. YOU MUST…

- **Afford time to learn.** Zynq UltraScale+ is well designed and documented but beware of the plethora of documents to be read and understood. The Technical Reference Manual alone is over 1100 pages! Can you afford the time to learn?

- **Ability to quickly form a highly talented, multi-disciplinary team of experts.** Key designers required: Embedded Software, Application Software, FPGA, Hardware, PCB Layout, and Signal Integrity. Don't approach these designs with a software or FPGA bias – it's dangerous – it must be balanced: software gurus and FPGA gurus battling to the best design.

- **Make the right System-level decisions.** What functions should be assigned to the Processing System (PS) and which must be assigned to the Programmable Logic fabric (PL)? How do these two entities exchange information efficiently?

- **Select the correct Zynq UltraScale+ family member for the job.** What hard functions do I need? How much FPGA fabric will tasks consume? What about DDR4 bandwidth? Power dissipation? Design limitations? Cost implications?

- **Know the Tools.** With Zynq UltraScale+, it's no longer just Vivado, or even just AMD (Xilinx) tools, you're also using a myriad of other software development tools and processes.

  Being a tool expert is often the difference between achieving gratifying revenue, or a late launch, a missed window, and a lost customer.

- **Have a properly equipped lab.** Your design is back from manufacturing. Bringing up a Zynq UltraScale+ design is akin to bringing up a complex multi-core Processor alongside an FPGA. You'll need: Intelligent test loads, scopes, debuggers, supplies, high accuracy meters, and perhaps spectrum analyzers, VNAs, and a thermal chamber.

As an AMD Premier Design Partner, 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 in on the forefront of Xilinx's roadmap, experienced in the most advanced tool flows, and is top of mind within the Xilinx support network.

Key Element	Fidus	Fidus Fact
Afford time to learn	✓	By delivering ~50 Zynq UltraScale+ designs per year, there's a lot more doing than learning! Fidus also takes pride in transferring our knowledge.
A highly talented, multi-disciplinary team	✓	Fidus is staffed with full-time experts in Software, FPGA, Hardware, PCB Layout, and Signal Integrity design. The team is quickly formed, talented, and proven cohesive.
Make the right System-level decisions	✓	With Fidus's design experts and Zynq UltraScale+ experience,most System level decisions become automatic.
Select the right Zynq UltraScale+	✓	Fidus's Zynq UltraScale+ development process ensures that the device is selected and sized appropriately. We'll meet your cost and functionality targets, and if it's just not possible we'll explain why and propose solutions.
Know the Tools	✓	As an AMD Premier Design Services Partner Member, Fidus often trains alongside AMD's own FAEs. This means we have very early exposure to the tools and detailed knowledge of tips and tricks.
Have a properly equipped lab	✓	When you bring-up as many Zynq UltraScale+ designs as Fidus does, the lab set-up is not a question of "what do we need" or "how do we do that", it's about gathering the test equipment we already know we need.
Recognised AMD Premier Design Partner	✓	As an AMD Premier Design Partner and the first Xilinx Premier Design Sservices member in North America, Fidus receives exclusive training, certification, early access to tools, IP, and new silicon, ensuring we are at the forefront of AMD's roadmap and experienced in the most advanced tool flows.

THE PROOF IS IN OUR DESIGN

Due to the customer confidentiality we can't show you photos of this cool desktop device

Sidewinder™ featuring
- Zynq US+ ZU19EG, 1760pkg
- PCIe Host Connector Gen3
- 100Gbps QSFP Cages
- M.2 SSD Connectors
- 8643 NVMe connectors
- DDR4 (PS 16GB, PL 16GB)

Applications include
- Storage Acceleration
- Compute Acceleration
- Generic development

Mantyss™ featuring
- Zynq US+ ZU19EG, -3 speed
- FMC+ Port (32Gbps)
- Samtec® FireFly's (32Gbps)
- USB3.0 SuperSpeed Port
- SecureDigital Port
- DDR4 (PS 16GB)

Applications include
- ASIC IP development
- Software Defined Radio dev
- Synopsys® HAPS Daughterboard

Video Streamers, featuring
- Zynq US+ EV devices
- HDMI4K, 12G-SDI Interfaces
- GigE Port, USB3.0 SuperSpeed
- H.264/H.265 VCU
- Linux-based
- Cost sensitive consumer

Applications include
- Video Streamers
- Format Converters

ABOUT FIDUS

Founded in 2001, Fidus Systems specializes in electronic system design and development, with teams in Ottawa, Waterloo, and San Jose focusing on FPGA design, embedded software, ASIC RTL design and verification, hardware design, and signal integrity, among others, to deliver innovative solutions for emerging technology markets. As an AMD Premier Design Partner and an Altera Gold Partner, we have forged strong relationships with major silicon vendors, enhancing our capability to handle complex projects. With over 20 years of experience and 4000+ projects completed, our precision-driven process ensures that designs and prototypes reach the market faster, earning us a reputation for transparency and a commitment to getting it right the first time.

fidus
innovate·design·deliver

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