Glossary of Terms

Advanced Microcontroller Bus Architecture (AMBA) – an on-chip communications standard for high-performance 32-bit and 16-bit embedded microcontrollers.

Application-Specific Integrated Circuit (ASIC) – an integrated circuit customized for a particular use (versus general-purpose use). For example, a chip designed solely to run a cell phone for a specific manufacturer is an ASIC.

Application-Specific Standard Product (ASSP) – a chip designed for a unique purpose that can be sold to a broad range of end users (versus a single company). For example, a chip designed for video and/or audio encoding and/or decoding that can be sold to multiple manufacturers is an ASSP.

ARM Processor – a 32-bit reduced instruction set computer (RISC) instruction set architecture (ISA) developed by ARM Holdings.

Advanced eXtensible Interface (AXI) – a bus protocol targeted at high performance, high clock frequency system designs and includes a number of features that make it very suitable for high speed sub-micron interconnect.

Chip – a silicon-based integrated circuit or device.

Design Cycle – the pre-production period of time that spans the conception, design and development of a product.

Device – a silicon-based integrated circuit or chip.

Digital Signal Processor (DSP) – a specialized microprocessor with an optimized architecture for high speed processing of large amounts of digital information. Used in audio, communications, image manipulation, and other data-acquisition and data-control applications.

Ecosystem – a community of partners, designers and electronics customers involved in conceiving, designing and bringing electronic products that use programmable devices into production and eventually to market. For each specific vertical end market, there is a corresponding ecosystem.

Evaluation Kit – a product that bundles a specific set of Xilinx Targeted Design Platform components into a single orderable product.

Fabless – a class of semiconductor companies that design, test, market and sell ICs, but subcontract the fabrication or ‘fab’ of semiconductor devices to a specialized manufacturer.

Field Programmable Gate Array (FPGA) – an integrated circuit device or ‘programmable platform’ that can be programmed in the field after being manufactured, providing electronic product manufacturers with additional design flexibility. Unlike application-specific chips, FPGAs allow engineers to make changes very late in the design cycle and even upgrade products with new functionality after manufacture.

Field Programmable – an electronic device or embedded system is said to be field-programmable or in-place programmable if its firmware (stored in non-volatile memory, such as ROM) can be modified "in the field," without disassembling the device or returning it to its manufacturer.

Foundry – a silicon wafer fabrication facility. Also called a ‘fab.’

FPGA (Field Programmable Gate Array) – a class of integrated circuits pioneered by Xilinx for which the logic function is defined by the customer using development system software after the IC has been manufactured and delivered to the end user.

Integrated Circuit (IC) – a major building block of modern electronic systems. Synonymous with a chip, an integrated circuit (IC) is a small electronic device made out of a silicon that integrates transistors, resistors and capacitors onto a single chip.

Intellectual Property (IP) – a function or algorithm that can be implemented in programmable logic with a defined interface (input, output, and control) and that behaves deterministically based on this interface. IP can be delivered as source code or as an encrypted netlist.

Logic – one of the three major classes of ICs in most digital electronic systems: microprocessors, memory, and logic. Logic is used for data manipulation and control functions that require higher speed than a microprocessor can provide.

Nanometer (nm) – a measurement of one billionth of a meter, used as the standard measurement unit in IC design.

Plug-and-Play IP – IP can be easily used without the need for customization.

Programmable Imperative – a Xilinx term that describes the strategic challenge facing today’s electronic system manufacturers that compels them to use programmable logic devices to quickly respond to technology drivers, financial constraints, and market forces. Also used to describe a shift among electronic designers to incorporate programmable devices into low- to mid-volume applications designs in place of ASICs and ASSPs to speed time-to-market and reduce development costs.

Programmable Logic Device – a digital IC that can be programmed by the user to perform a wide variety of logical operations. FPGAs and CPLDs are classes of PLDs. an electronic component used to build reconfigurable digital circuits.

Process Technology – the technology and procedures used to convert blank silicon wafers into finished wafers containing hundreds to thousands of chips. These chips are tested and assembled into plastic or ceramic packages before final use.

Reference design – a technical blueprint of a system that contains essential elements intended for others to copy, enhance and modify for a specific application.

Socketable IP – a Xilinx term that means that each piece of Xilinx or third-party IP can be easily used without the need for customization.

Submicron technology process – generic name for modern IC manufacturing methods where dimensions on the wafer can be controlled to tolerances well below one micron (one millionth of a meter).

System-on-Chip (SOC) – a chip that holds the necessary hardware and electronic circuitry (programmable logic, memory, processing, peripheral interfaces, clocking, and IO) for a complete system.

Targeted Design Platform – a Xilinx-specific term that describes the integration of five key components into a common development and run-time environment for FPGA designs, including: 1) design tools supporting different design methodologies, 2) boards, 3) Intellectual property cores, 4) FPGA silicon devices, 5) targeted reference designs. Targeted Design Platforms enable software and hardware designers alike to leverage common design methodologies, development tools, and run-time platforms. This allows them to spend less time developing the infrastructure of an application and more time building differentiating features into the end application.