

# *ComLSI*

Computing/Communications Electronic Systems Integration

## **TEAM & CAPABILITIES SUMMARY**

VLSI & Analog/Mixed-Signal/Digital IC Design, Product Development and Professional Consultancy Services

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## Team

- ❖ 2 design and 1 marketing
- ❖ Expert Analog/Mixed-Signal and digital designers averaging 15 years of experience in VLSI design / manufacture
- ❖ Skilled in VLSI SoC architecture, design and IP / Product development at leading semiconductor manufacturers such as Intel corporation
- ❖ First-Silicon success in multiple chip implementations: 971 Camera Kit™ CMOS image sensor, a Terabits Router, Distributed Voltage Regulation in the 80296SB™
- ❖ Broad skill base spanning analog, digital, packaging, board and system-level design
- ❖ 29 issued patents, and numerous journal and conference publications

## Chips and designs delivered

Concept to silicon / system (publications available for most)

- ✦ An integrated, distributed voltage regulator for microcontrollers (80296SB™)
- ✦ 400Kpixel CMOS image sensor for Intel® used in the 971 Decatur™ Camera Kit
- ✦ A Terabits/Second Crossbar Switch and Non-Blocking Router (research)
- ✦ MEMS HV Driver chip (40V Outputs) for Duplexer Arrays (research)
- ✦ A power sequences for thermal pen control in strip chart recorders
- ✦ An automatic test robot for hydraulic excavators

## Chip Design Flow

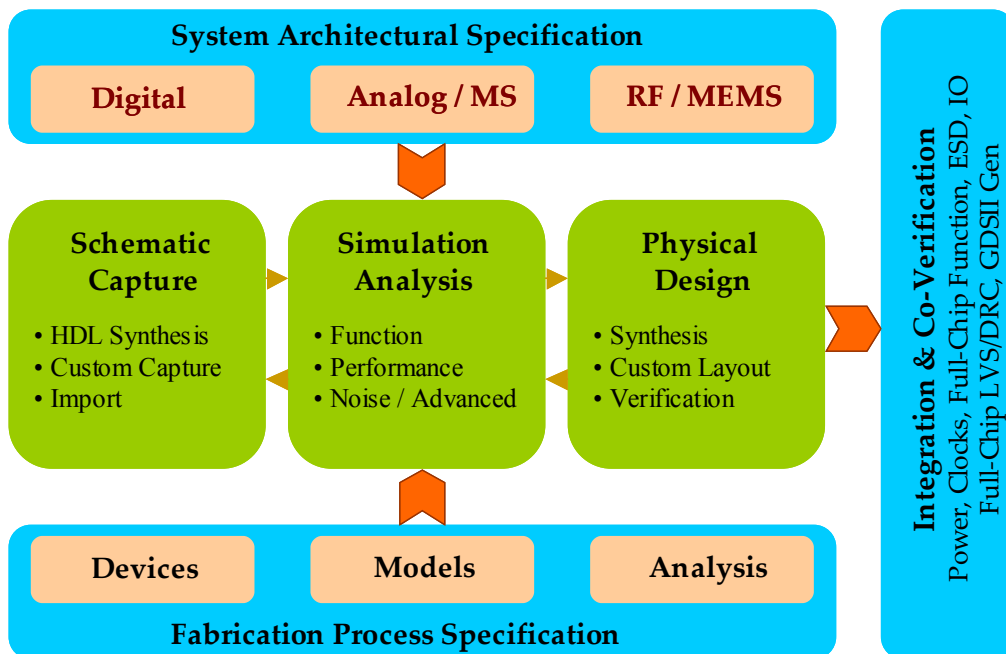


Figure 1: Custom design flow illustration

## Design IP Expertise

### Analog / Mixed Signal:

- ✦ Memory (RAM, ROM, NVRAM) designs
- ✦ Integrated Voltage Regulation (On-chip, On-package)
- ✦ CMOS mega-pixel Image Sensor architecture & circuits
- ✦ Switched-Cap Circuits (A2D's, D2A's, Filters, Amplifiers)
- ✦ Clock Generation & Distribution (PLL's, DLL's, Clock trees, Grids, Buffers)
- ✦ High-Speed Signaling PHY (LVDS, low-power IO techniques)
- ✦ Power management (Buck/Boost DC-to-DC, transient suppression, decoupling)
- ✦ HV driver design (MEMS, LCD Drive)

### Area-specific expertise:

- ✦ PCI Express (Gen-I and II)
- ✦ PLL's for low-jitter, low-skew and high-frequency applications
- ✦ A2D and D2A converters for high-accuracy and/or high-bandwidth applications
- ✦ Voltage and Current reference design & IP

## Project management

ComLSI's team includes hands-on architects and managers with multiple successful chip efforts under their belts. These managers have been trained at leading VLSI design and manufacturing companies such as Intel® and are accomplished project/people managers.

For efficiency and ease of communication across global locations, ComLSI's team employs proven project management techniques through industry standard documentation software. Most communication is electronic. A single project owner who takes on the responsibility for planning, communication and delegation of project tasks manages each project from a central location, typically the US. The project owner is also the primary customer contact.

## Additional information

- ✦ Close EDA company & FAB relationships for rapid support
- ✦ Global resources relationships with a practical interface model (Virtual Design Center) – more information at <http://www.comlsi.com/vdc.htm>
- ✦ References upon request.