



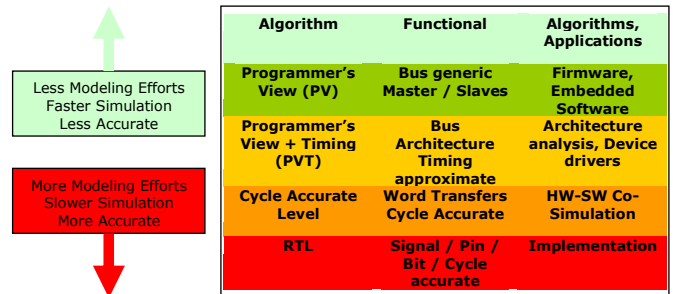
About CircuitSutra

CircuitSutra Technologies Pvt Ltd incorporated in 2005 by the professionals from semiconductor industry. Keeping a clear goal to become **Indispensable Software Partner to the Semiconductor Industry** CircuitSutra focuses on IC/SoC Design Companies, Embedded Product Companies, EDA tools companies. Till date we have executed several C++ projects and got the excellent feedback from customers. We have setup a strong team with right skill set by growing the company through bootstrapping. We recently got the approval for initial seed funding, further enhancing our capability to execute bigger projects in the Semiconductor domain.

SystemC Modeling Services

CircuitSutra provides SystemC based modeling services to SoC / IC companies which include creating model of the target system at various abstraction levels (Functional view, Programmers View, Architectural view, Verification view).

- SystemC based Electronic System Level (ESL) Design methodology development.
- SystemC Transaction Level Modeling (TLM) of IP/SoC at various abstraction levels (PV, PV+T, Cycle Accurate).
- Virtual Platform development services
 - Platform for architectural exploration
 - Platform for eSW development & testing
 - Platform for Hardware/software analysis
 - Platform for co-simulation
 - Platform for RTL verification
 - Platform for any other customized need
- TLM Testing services



TLM Abstraction Levels & Usage
CircuitSutra Services covers the entire spectrum

SystemC Standards

Circuitsutra is very much committed to the adoption of standards. We have developed expertise in the standards that have passed the initial hurdles and are on the verge of widespread adoption:

- SystemC IEEE 1666 (Reference implementation from OSCI)
- TLM Standards
 - OSCI TLM
 - OCP TLM (TL3, TL2, TL1)
 - Greenbus TLM
- Bus / Channel implementation
 - OCP Channels
 - Greenbus
- Verification Library (OSCI scv1.0)

We are also familiar with vendor specific technologies.

SoC Platforms		GreenSocs Open Source SystemC Infrastructure
Specific Bus Standards	IP Models	
OCP-IP (TL3, TL2 ...)	Greenbus TLM	
OSCI TLM1.0	OSCI SCV 1.0	
SystemC (IEEE 1666)		
ANSI C++ Language Standard		

CircuitSutra Skills : SystemC layered standards

SystemC Benefits

- Reduces time to market for SoC
- Full programming power of C++ along with the concurrency of electronics systems.
- Raises the level of abstraction when modeling electronic systems
- Enables very fast system level simulation models
- Enables embedded software development much before the hardware implementation
- Enables new faster / reliable verification methodologies

Business Models

We are flexible on engagement models with the customer, and are willing to accommodate the mix and match of the following as per the customer's convenience.

- Fixed price projects
- Time & Material
- Programmers on contract
- Extended development team
- Customer support for ESL tools

CircuitSutra: Unique Value Proposition

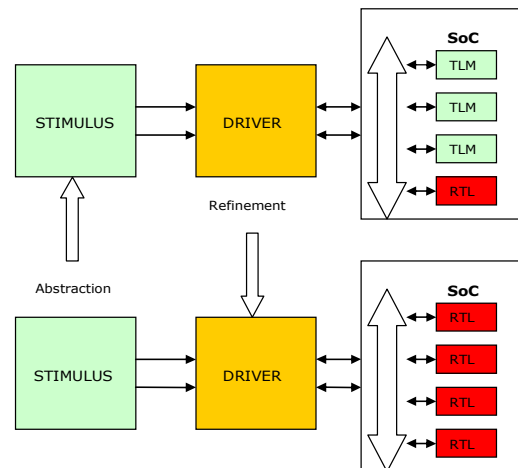
Sharp focus and high efficiency of a startup company. Our offerings are very cost effective. Operating from an incubation center, we are able to pass the cost benefits to the customers.

SystemC has emerged as a hardware modeling language rather than the hardware design language. SystemC TLM modeling requires very unique skills, which is the hybrid of Software Development and Electronics design. It requires entirely different approach as compared to the hardware design using verilog / vhdl. We have the right combination of skills for TLM modeling.

- We are experts in C++ and very well understands about how to model the real world objects using the OOPS features of C++.
- We understand the concepts of Electronics System design.

We use Greensocs open source SystemC infrastructure that greatly enhances the productivity and reduces the development cost. It also ensures easy integration with complex design flow involving commercial tools from several vendors.

Our ability to take up embedded software development right from the programmer's view model, makes us the ideal SystemC partner to SoC companies.



Abstraction: Increase simulation speed by abstracting the RTL not being tested.
Refinement: Start verification before implementation is complete. Refine as RTL blocks become available

TLM usage in platform based verification

Team

CircuitSutra has a strong team consisting of professionals having average of 8 years of experience in multinational companies including SCL, Cadence, Intel, Synopsis, Philips & Infosys. Team members have worked on large complex projects in C++ and SystemC involving several million lines of code. They were involved in developing the TLM model of the complete System on Chip.

The team has diversified experience and expertise in both product development and services model and value the significance of **Customer Satisfaction** and **Meeting Deadlines**.

With key emphasis on **Quality**, CircuitSutra follows through the Quality Processes during Product Development and Project Execution.

Contact Us

CircuitSutra operates from a state-of-the-art technology incubation center in Noida, India. Contact us to learn more about how you can benefit from our services and get a free estimate.

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