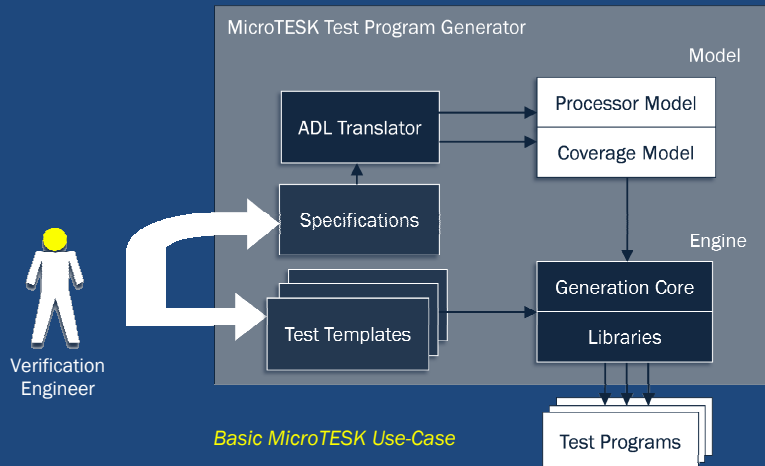
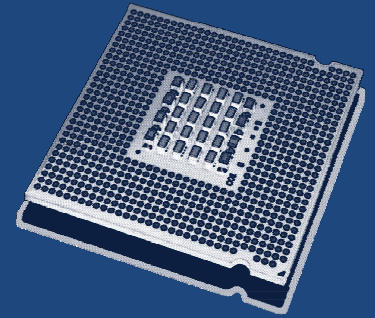


**MicroTESK** is a reconfigurable (retargetable and extendable) model-based test program generator for microprocessors and other programmable devices. It is customized for a particular architecture by using light-weight instruction set specifications, which makes it easy to support various RISC and CISC architectures and facilitates automated extraction of knowledge about situations to be covered by tests. A convenient test template framework allows rapid development of complex verification scenarios.

**Open Source** | <http://forge.ispras.ru/projects/microtesk>



## Target Architectures

- MicroTESK is **retargetable**
  - RISC
  - CISC
  - DSP

} wide range of ISA
- Primary focus on **RISC architectures**
  - ARM
  - MIPS
  - SPARC

} + custom designs

## Microprocessor Specification

- Specifications in **nML/Sim-nML** (TU Berlin/IIT Kanpur)
  - Memory structure and addressing modes
  - Behavioral description of instructions
  - Assembler/binary instruction formats
- Configurations in **domain-specific languages**
  - Memory management (TLB, L1 and L2)
  - Pipeline logic (microarchitectural networks)
  - Branch processing (prediction, etc.)

*Instruction Description in Sim-nML Language*

*Test Program Template in Ruby Language*

## Test Template Description

- Ruby-based language
- Focus on simplicity and productivity
- Integration with test generators
- Access to processor and coverage models

## Test Program Generation

- Random
- Combinatorial
- Constraint-based
- Model-based



The MicroTESK test program generator is being developed at the Software Engineering Department of the Institute for System Programming, Russian Academy of Sciences (ISPRAS). The institute performs both academic research and industrial development projects as well as provides advanced services and consulting in various areas of software engineering, information technologies and computer science.

We gratefully acknowledge **Indian Institute of Technology Kanpur (IIT Kanpur)** provided us with Sim-nML documentation and examples.

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