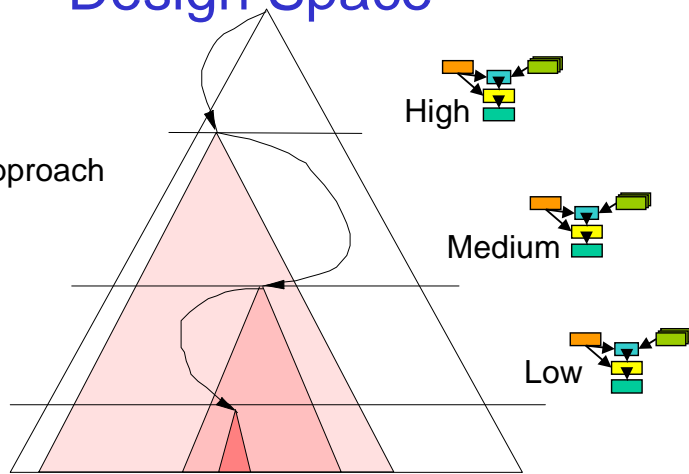


Stepwise Exploration of the Design Space

Y-Chart Approach



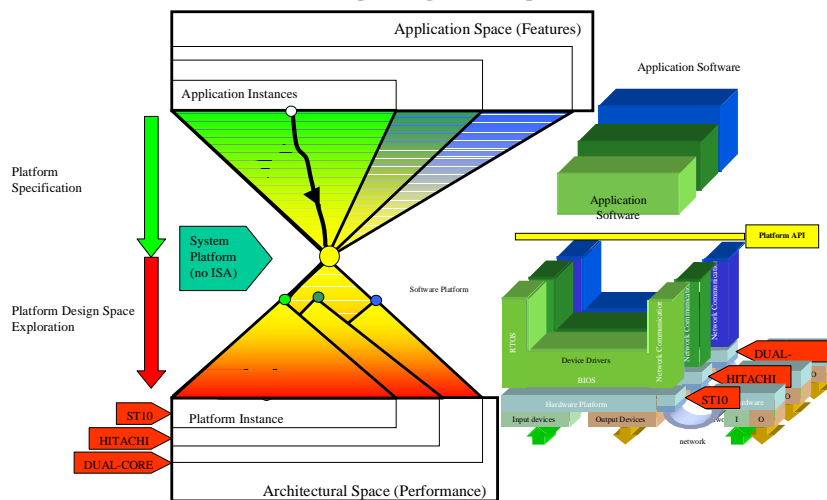
DAC



System Level Design
with Embedded Platforms

Tutorial

Platforms



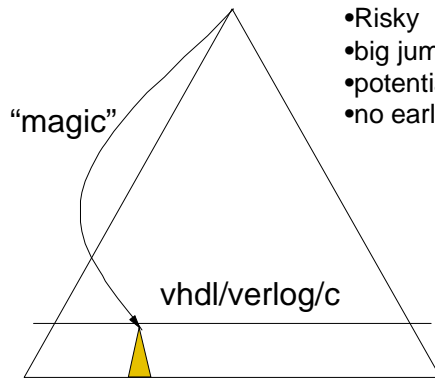
DAC



System Level Design
with Embedded Platforms

Tutorial

Where do we stand?



Traditional approach

DAC

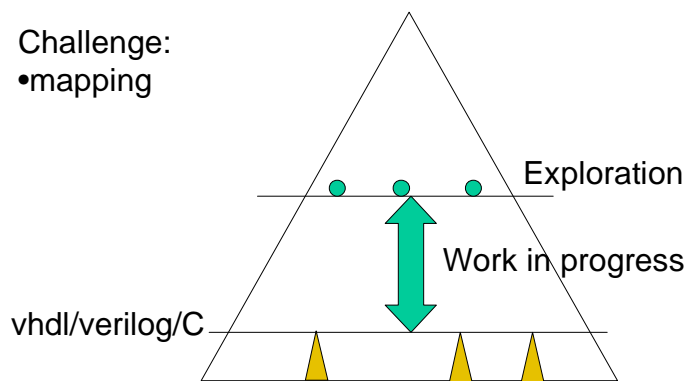


**System Level Design
with Embedded Platforms**

Tutorial

Where do we stand?

Challenge:
•mapping



Wireless Research

DAC

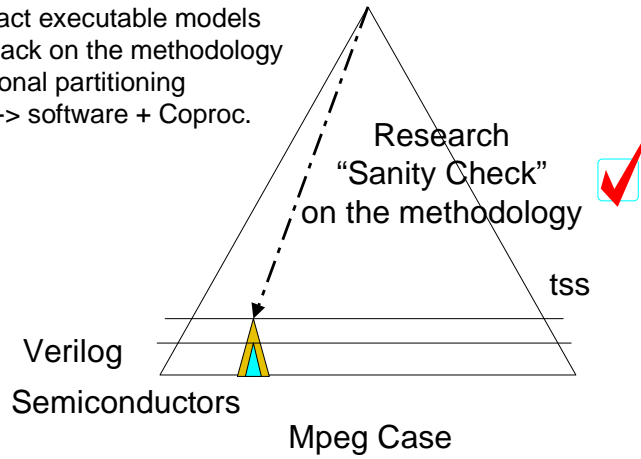


**System Level Design
with Embedded Platforms**

Tutorial

Where do we stand?

- Abstract executable models
- feedback on the methodology
- functional partitioning
- KPN -> software + Coproc.

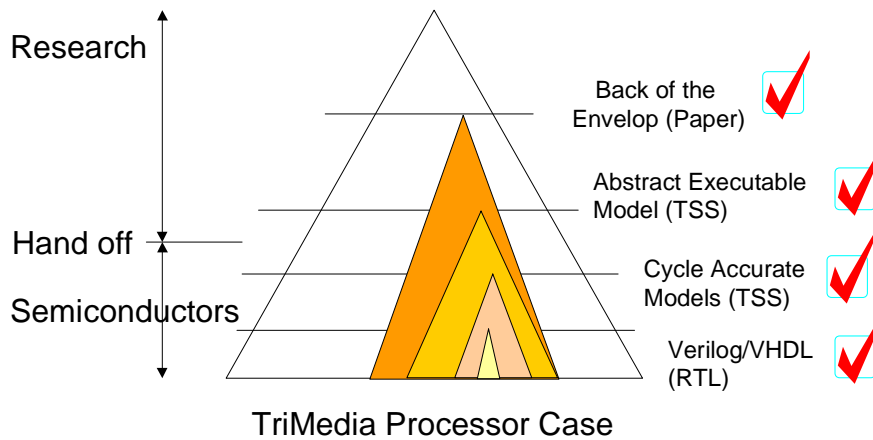


DAC 

**System Level Design
with Embedded Platforms**

Tutorial

Where do we stand?

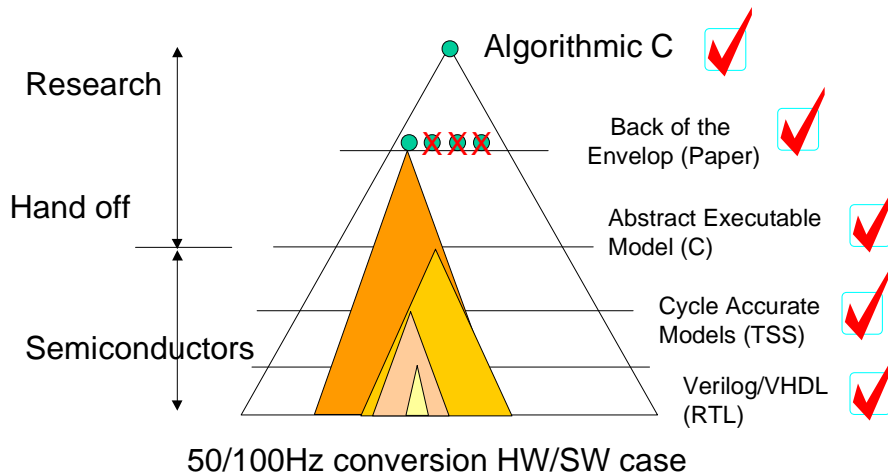


DAC 

**System Level Design
with Embedded Platforms**

Tutorial

Where are we going



DAC



System Level Design
with Embedded Platforms

Tutorial

System design needs

- library of functions (applications)
- library of architecture components at several levels of abstraction:
 - HW architecture IP components
 - SW architecture IP components
- System level design flow
- Industry standards for library modeling

DAC

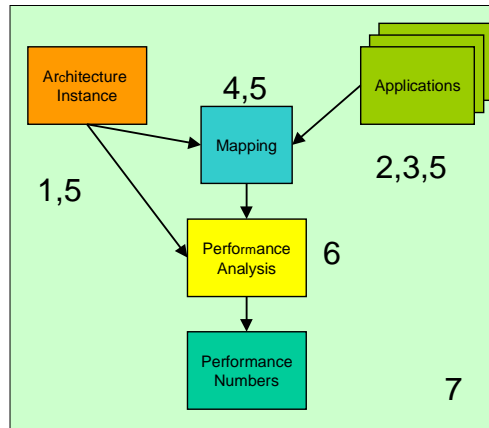


System Level Design
with Embedded Platforms

Tutorial

Embedded System Professional needs to know

1. Computer architecture: instruction sets, interrupts, pipelines, vector processing, DMA, bus protocols, cache coherency
2. Application knowledge. Signal processing: fft, wavelet coding, mpeg4, motion estimation, Protocols.
3. Programming languages: PERL, Java, C++, design patterns
4. Core compiler technology and real-time operating systems: priorities, rate monotonic scheduling
5. Models of Computation and System Level Design Languages
6. Understanding Metrics, Design of Experiments
7. How to cooperate with hardware, software and colleagues: register settings, cvs, APIs, code reviews, ????



Transistor?

DAC



System Level Design
with Embedded Platforms

Tutorial

Y-Chart Check List Where is your:

- architecture description file?
- applications in an implementation independent format?
- explicit mapping step?
- Retargetable Compiler?
- Retargetable Simulator?
- Design space exploration?
- Representation of the exploration data?
- Release policy and hand off?

Have a nice day

DAC



System Level Design
with Embedded Platforms

Tutorial