



# SoC Agile Development Using Intel® CoFluent™ Studio and Wind River Simics

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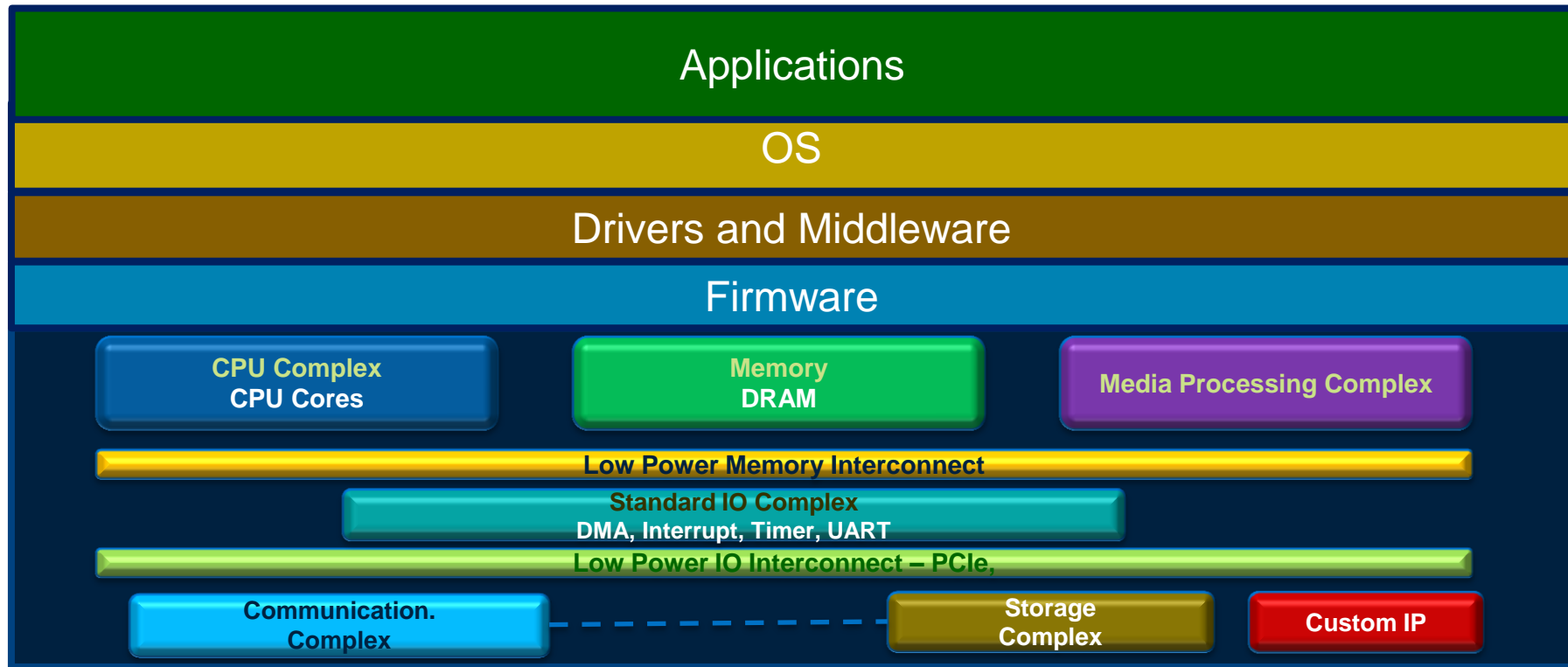
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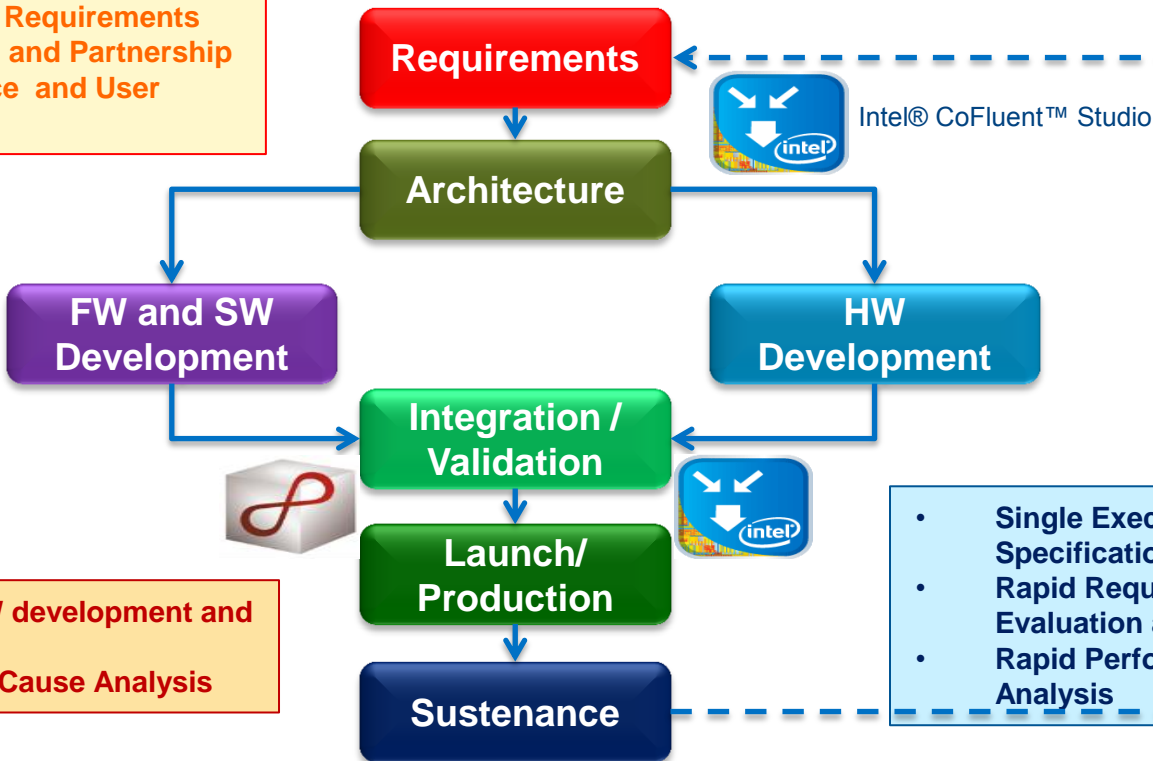
# SoC



# SoC and Agile Development

- Early and Continuous Delivery
- Welcome Changing Requirements
- Close Collaboration and Partnership
- Technical Excellence and User Experience

Wind River  
Simics

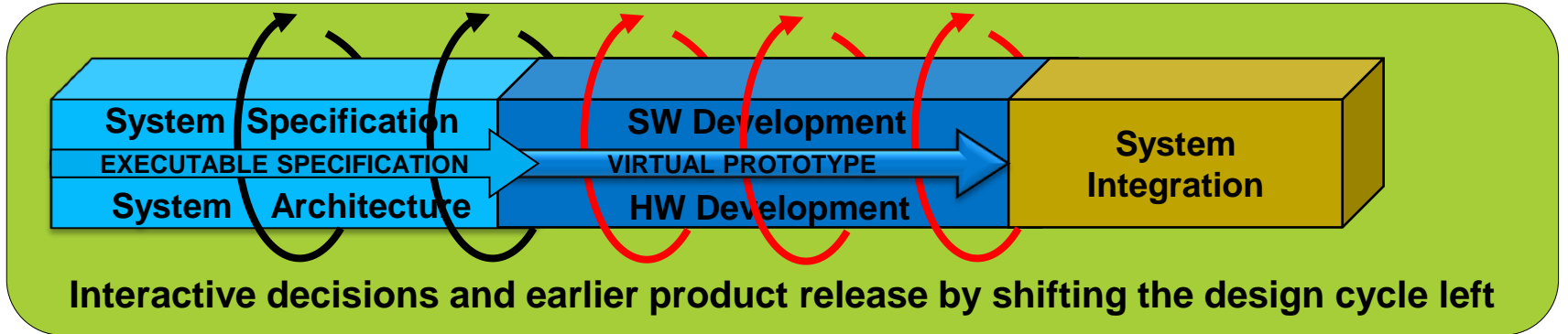
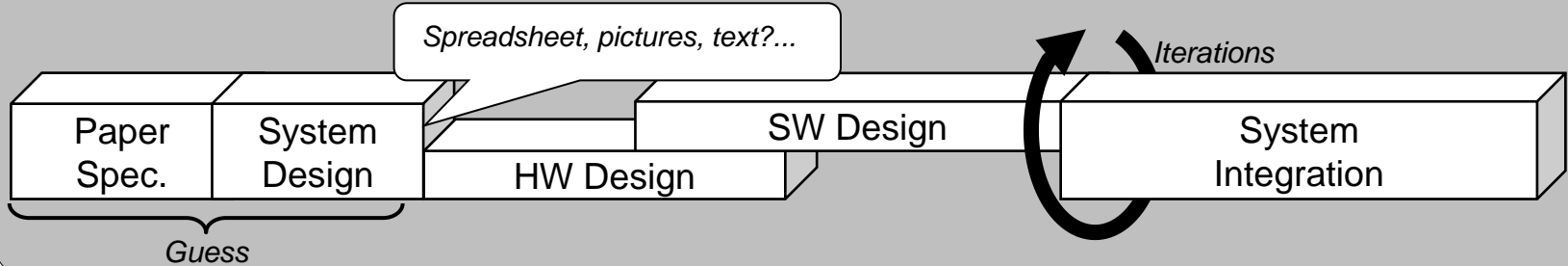


- Rapid FW and SW development and validation
- FW and SW Root Cause Analysis

- Single Executable Architecture Specification
- Rapid Requirement/Architecture Evaluation and Optimization
- Rapid Performance and Power Analysis

# Rapid Delivery - TTM

Traditionally, SW/FW and iterations development arrive too late in the flow



Intel® CoFluent™ Studio



Wind River Simics\*





# Wind River Simics

The leader in full system simulation for software development



**Accelerate** software development, free of hardware constraints



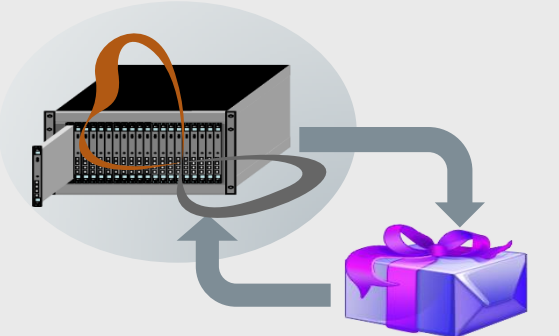
**Optimize** product design, development & deployment



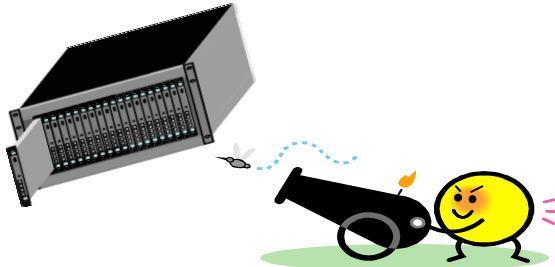
**Replace** physical hardware with a virtual platform

# Wind River Simics System Level Features

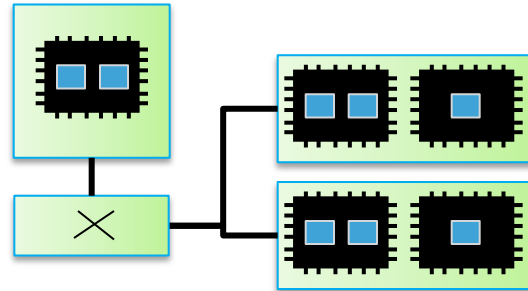
## Checkpoint and restore



## Repeatable fault injection on any system component



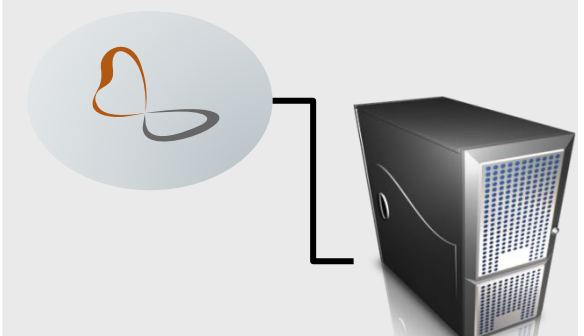
## Multicore, processor, board



## Scripting

```
con0.wait-for-string "$"  
con0.record-start  
con0.input "./ptest.elf 5\n"  
con0.wait-for-string "."  
$r = con0.record-stop  
if ($r == "fail.") {  
    echo "test failed"  
}
```

## Real-world connections



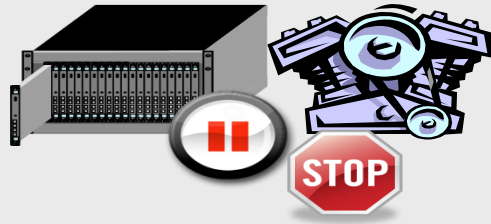
## Mixed endianness, word sizes, heterogeneity





# Wind River Simics System Debugging Features

**Synchronous stop for entire system**



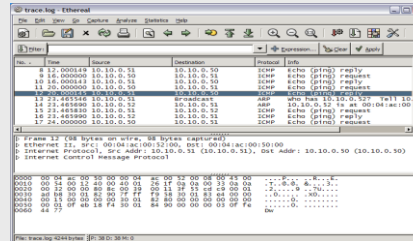
**Unlimited and powerful breakpoints**

```
break -x 0x0000 length = 0x1F00
break-io uart0
break-exception int13
```

**Determinism and repeatability**



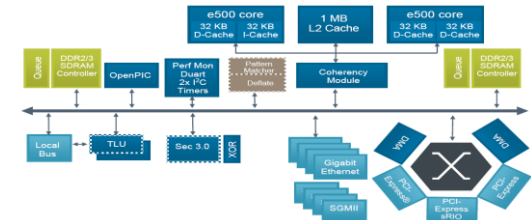
**Trace anything**



**Reverse execution**

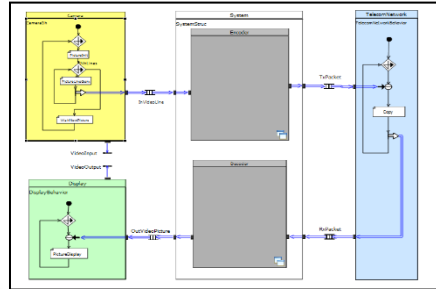


**Insight into all devices**



# Rapid Model Generation from Intel® CoFluent™

Specification is captured with graphics, C/C++ code and timing information



The design intent is saved in a meta-model

High-Level Synthesis

SystemC\* Simulation

Virtual Platform

# Summary

- Early and Continuous Delivery
  - Rapid Architecture Development
  - Single Design Source thru Executable Architecture Specifications – minimum redo's
  - Concurrent Hardware, Firmware and Software Development
- Welcome Changing Requirements
  - Rapid Requirements Evaluation and Validation
- Close Collaboration and Partnership
  - Sharing of Executable Models and Specifications
- Technical Excellence and User Experience
  - Intelligent Requirements/Architecture Trade Off
  - Rapid Root Cause Analysis

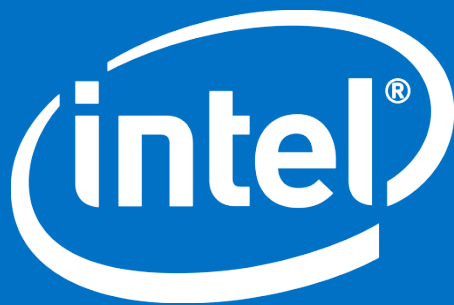
# Additional Sources of Information

For Intel® CoFluent™ Studio

<http://www.intel.com/content/www/us/en/cofluent/intel-cofluent-studio.html>

For Wind River Simics

<http://www.windriver.com/simics/>



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