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Background and Motivation

The Applications of our Industrial Partners are often in the form of Embedded Streaming Applications, like: Radar, Vision, Communication systems.

Characteristics Embedded Streaming Applications:
• Continuous dataflow, often at rates of gigabytes per second
• Processing in real time with deterministic behaviour
• Many new applications possible, if performance can grow with Moore’s Law
• Requirements on power efficiency and low cost
• Demands of rapid development (time to market)

Research Problem and Approach

Need for manycore systems…
… but they are difficult to use efficiently

We have a programming Chasm…

ESCHER will Deliver…
• Knowledge and understanding of the common and specific demands in streaming applications from different domains
• An application development framework
  Keywords: DSL, ADL, MCVM
• Suggestions for optimized heterogeneous architectures
• A demonstrator combining the application development framework with an optimized heterogeneous many-core architecture

Results so Far
• First version of ESCHER requirements developed
• Assessment of first subsets of tools
• Early concept for ADL and MCVM explored
• First demonstrator developed and ready to be sent for manufacturing

Publications

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