



PreMaDoNA Design Flow

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15 October 2004

logicaCMG

TU/e

PHILIPS

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Objectives

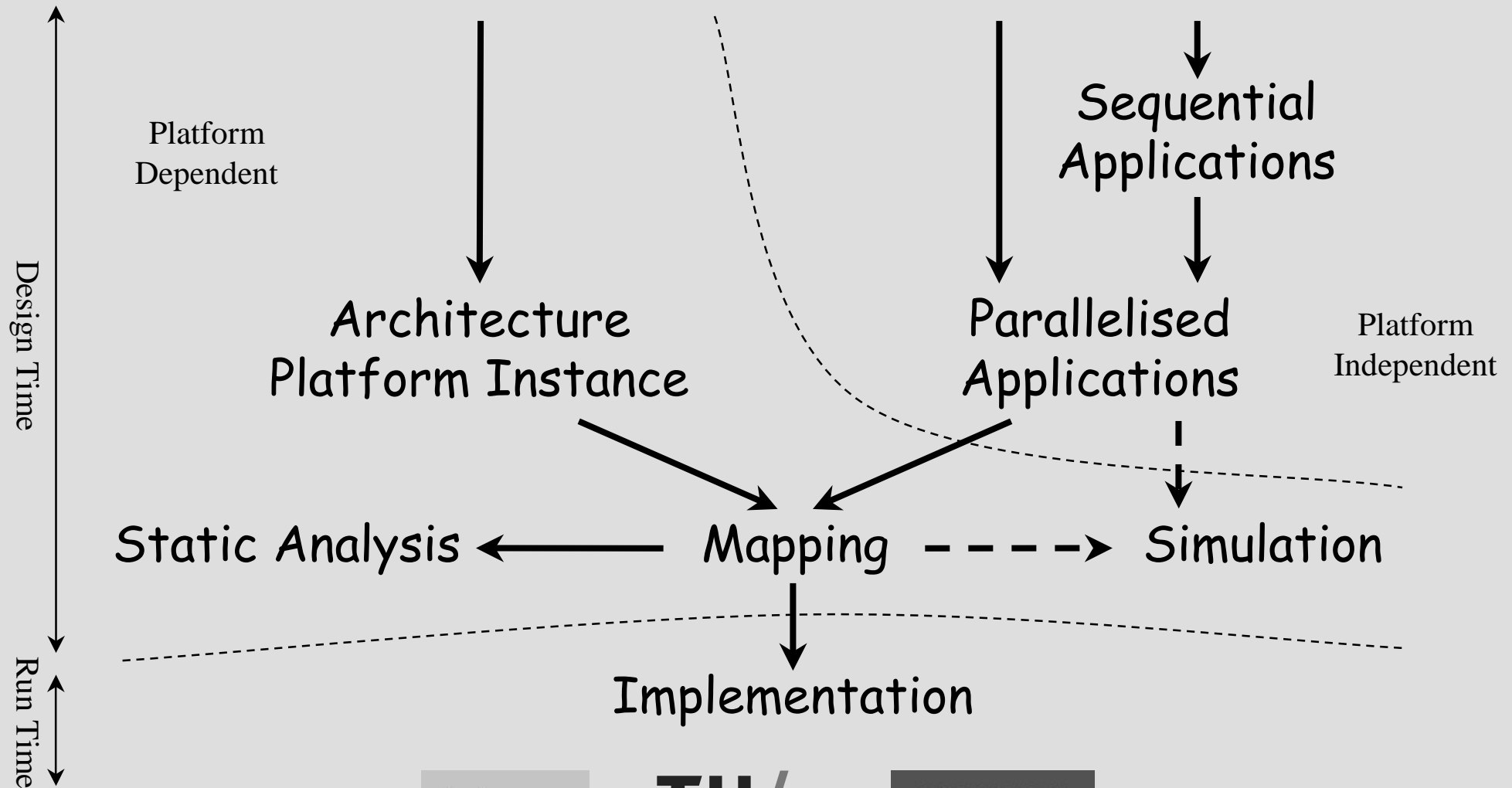


- Mapping of multi-media applications on NoC-based MPSoC
 - Dynamism: Match desired quality with available resources
 - Predictable: Guaranteed satisfaction of non-functional properties
 - Time-to-market: Minimise number of design iterations
- Which design steps to perform and in what order?
- Comply with existing techniques and tools
- Assess proposed method with industrial case studies

Some First Ideas



- Vision: "Property-preservation by construction"



Issues



- Model of Computation
 - KPN/SDF-based -> Streaming
 - Restricted expressiveness
 - Static analysis
 - RPN -> Streaming + Control
 - No analysis techniques
 - POOSL -> Streaming + Control
 - Statistical analysis techniques
 - Property-preservation by construction of control but no data
- Incompleteness of existing tool flow

Cooperation



- Case studies
 - LogicaCMG -> MPEG-4
 - Philips Research -> Graphics Texture Mapping
 - Philips Semiconductors -> Mobile Communications
 - Philips Semiconductors -> Multiple Applications
- Related Projects
 - Æthereal: NoC Simulator & Synthesis Tools
 - Hijdra: MPSoC Simulator
 - DEMONS: Debuggings and Monitoring Networks-on-Silicon
 - FAME: Flexible Application Mapping Environment
 - PROMES: Programming Multi-Processor Embedded Multi-Media Systems
 - SmartCam: Devices for Embedded Intelligent Cameras
 - Betsy: Being on Time Saves Energy
 - Boderc: Predictable Real-Time Software Design
 - Scalp: SP-Graphs
 - Arthemisia: Architecture, Programming and Exploration of NoC platform