

ARTEMIS Joint Undertaking

The public private partnership In embedded systems



ARTEMIS

Automatic Architecture Synthesis and Application Mapping

ASAM

Advanced Research & Technology for Embedded Intelligence and Systems

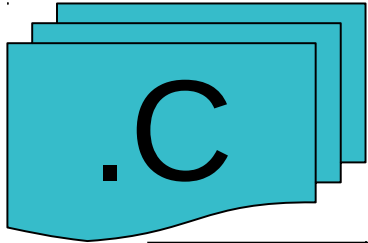
§ Many modern applications demand ultra high performance and flexibility at the same time

The heterogeneous MPSoC platform based on adaptable ASIPs:

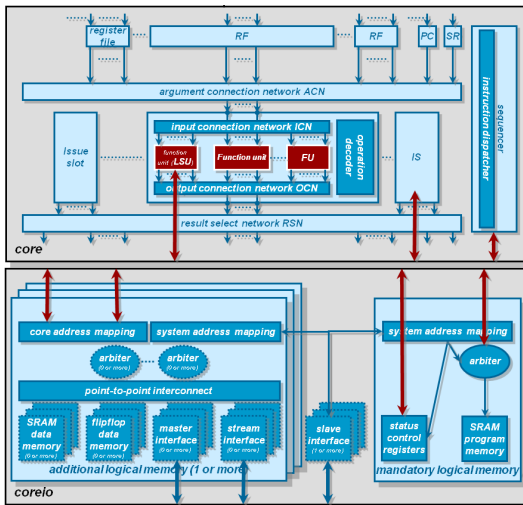
- ∅ provides the flexibility required
- ∅ enables programmable SoCs with performance close to that of hardwired ASICs, yet at lower cost, lower NRE, and with much shorter times to market

ASAM aims to reduce the design costs and design time of these MPSoCs through development of a uniform automatic process of architecture synthesis and application mapping

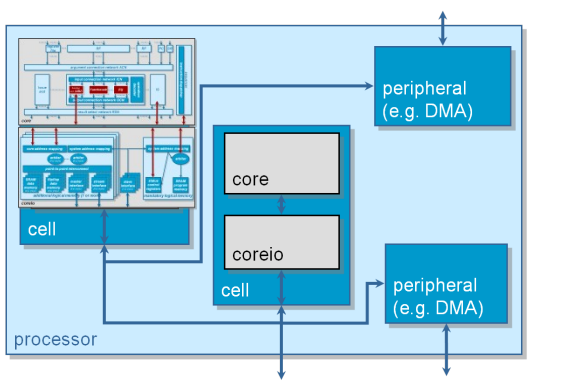




- § Automating the construction of the MPSoC and ASIP designs through advanced design-space exploration:
 - ∅ the combined macro- and micro-architecture exploration necessary for SoCs based on adaptable ASIPs,
 - ∅ addressing the actual constraints of modern SoC design,
 - ∅ advanced estimation, simulation, and emulation techniques for fast analysis and decision turn-around time



- § Advancing the state-of-the-art in application parallelization, partitioning, scheduling and mapping needed to construct high-quality MPSoCs



§ The new embedded system design technology:

- ∅ addresses fundamental development challenges for systems of the future
- ∅ fulfills demands for ultra-high performance, efficiency and flexibility at low costs and short development time
- ∅ fulfills the needs of multi-domain and cross-domain applications
- ∅ relevant to broad range of applications: consumer electronics, multimedia, entertainment, telecom, medical imaging and instrumentation, advanced machinery, military, etc.
- ∅ applicable to many implementation technologies:
SoC/ASIC, structured ASIC, FPGA
- ∅ addresses:

Sub-programme ASP5: Computing environments for embedded systems

Priority 3.1.3: Methods and tools, providing a complete flow and design space exploration for Systems-on-Chip

Priority 3.1.1: Reference designs and architectures, in particular through composability and resulting predictability

- § Requirements on Design Methodology, Flow and Tools 11/'10
- § Methodology, flow and use-cases defined 05/'11
- § Basic methods and tools of the flow defined 11/'11
- § Basic tools of the flow implemented and initially tested 05/'12
- § Basic tools integrated into the uniform flow and tested 11/'12
- § Project work, case studies, assessments performed 05/'13

» CAMERA SOLUTIONS



» VIDEO SOLUTIONS



» PROCESSORS

	COMMUNICATIONS	CSP
	IMAGING	ISP
	VIDEO	VSP
	DEVELOPMENT TOOLS	

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thank you for your attention

L.Jozwiak@tue.nl

Menno.Lindwer@siliconhive.com