# Early Adopters of ARM Cortex-A73 CPU and Mali-G71 GPU Successfully Tape-out Using Synopsys' IC Compiler II

Optimized Reference Implementation Using Galaxy Design Platform Available for New ARM Cortex-A73 Processor

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**Highlights:**

- Early adopters of ARM's new premium mobile products – the ARM Cortex-A73 CPU and the ARM Mali-G71 GPU – successfully tape-out using Design Compiler Graphical and IC Compiler II
- Tools from the Galaxy Design Platform deliver world-class implementation productivity and QoR for ARM's new premium mobile processor cores
- Reference Implementation including scripts, floorplan and documentation is available today for Galaxy Design Platform tools with Cortex-A73 using ARM Artisan standard cells, memories and ARM POP IP
- Synopsys verification solutions used successfully by early adopters of ARM's new premium mobile platform include Virtualizer virtual prototyping and HAPS FPGA-based prototyping, as well as VC Verification IP with support for ARM CoreLink CCI-550 cache coherent interconnect

Synopsys, Inc. (Nasdaq: SNPS) today announced that early collaboration with ARM on its newARM® Cortex®-A73 Central Processing Unit (CPU) and ARM Mali™-G71 Graphics Processing Unit (GPU), targeted at a premium mobile experience, has resulted in successful early adopter tape-outs in advanced FinFET process technologies. In addition, the collaboration has delivered a Reference Implementation (RI) for Cortex-A73 with ARM Artisan® standard cells, memories and ARM POP™ IP. This takes advantage of the latest features in Synopsys Design Compiler® Graphical technology, IC Compiler™ II place and route system and other tools from the Galaxy™ Design Platform, resulting in a step-change in design productivity and optimized performance, power and area (PPA).

"Our new premium mobile suite, including Cortex-A73 andMali-G71, targets virtual reality, augmented reality and 4K video applications that demand the highest levels of sustained peak performance and efficiency," said James McNiven, general manager, CPU and media processing groups, ARM. "Our early collaboration with Synopsys has enabled our mutual partners to take advantage of the latest features from the Galaxy Design Platform to achieve the performance, power and area required for next-generation flagship mobile devices."

Early adopters of ARM's new premium mobile CPU IP can achieve excellent PPA results by utilizing key features from the Synopsys Galaxy Design Platform that are included in the quad core Reference Implementation for Cortex-A73:

- Multibit register inference and placement-awareness in Design Compiler Graphical significantly reduces power and congestion, and improves turnaround time up to 20 percent
- Layer-awareness, concurrent clock and data optimization, and advanced routing options available in IC Compiler II minimize signal-integrity effects and provide a frequency boost
- Advanced parametric on chip variation (AOCV/POCV) analysis during synthesis, place and route, and signoff for best timing and power
- PrimeTime® timing and leakage engineering change order (ECO) flows with IC Compiler II results in 20 percent better power without sacrificing performance
- Comprehensive hierarchical flow support throughout for fast implementation
- UPF power intent for optimal power management implementation and verification of the multi-voltage reference design
- Comprehensive multi-corner, multi-mode (MCMM) optimization and signoff analysis

Early adopters of ARM's new premium mobile platform are also taking advantage of Synopsys' verification solutions, including:

- Synopsys Virtualizer™ Development Kit (VDK) Family for ARM processors includes an ARM Fast Model for Cortex-A73
- Customers are also successfully using Synopsys' HAPS® FPGA-based prototypes with both Cortex-A73 andMali-G71
- Synopsys VC Verification IP (VIP) for the ARM AMBA® protocol provides support for the ARM CoreLink™ CCI-550 cache coherent interconnect and includes system level test-suites, a system monitor, protocol-aware debug and performance measurement capabilities

"Synopsys and ARM have been collaborating for more than 20 years to deliver optimized design solutions and enable mutual customer success," said Antun Domic, executive vice president and general manager, Synopsys Design Group. "Our collaboration on ARM's new Cortex-A73 processor and Mali-G71 graphics cores enables our mutual customers to take

advantage of innovative and stand-out features delivered by the tools in the Galaxy Design Platform to achieve industry-leading PPA targets for their premium designs."

**Availability & Resources**

Synopsys customers may download the Reference Implementation for the ARM Cortex-A73 CPU, as well as RIs for other ARM cores, today at http://solvnet.synopsys.com/arm-ri. The Virtualizer Development Kit for ARM processors, including the ARM Fast Model for Cortex-A73 is available today. HAPS FPGA-based prototyping systems supporting the ARM Cortex-A73 processor and the Mali-G71 GPU are available today. Synopsys VC verification IP for the ARM AMBA standard with support for CoreLink CCI-550 cache-coherent interconnect is available today. Synopsys also offers experienced, expert professional services to help designers achieve their design targets with ARM processors.

**About Synopsys**

Synopsys, Inc. (Nasdaq:SNPS) is the Silicon to Software™ partner for innovative companies developing the electronic products and software applications we rely on every day. As the world's 15th largest software company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and is also growing its leadership in software quality and security solutions. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing applications that require the highest quality and security, Synopsys has the solutions needed to deliver innovative, high-quality, secure products. Learn more at www.synopsys.com.

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