Total Compute Solutions
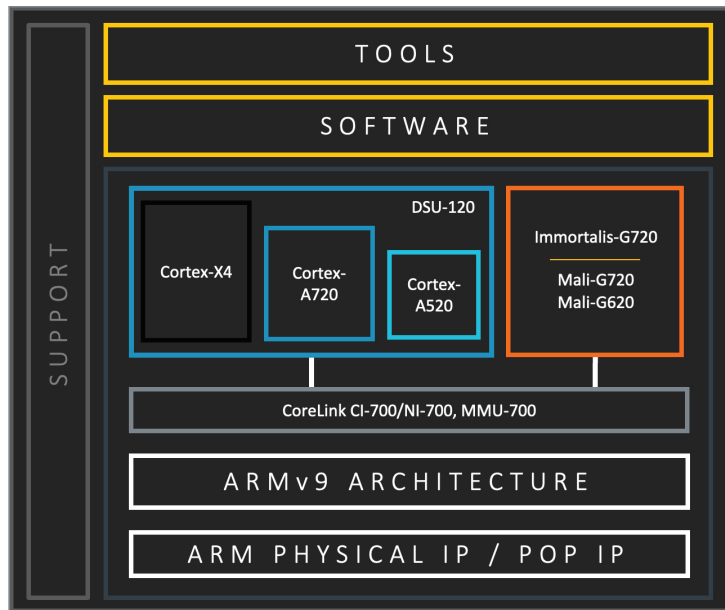# A Holistic Approach to SoC Design

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The Total Compute pillars

+ **Compute Performance**
  Performance, efficiency, and advanced compute capabilities for next-generation devices
+ **Security**
  In-depth, in-built, multilayered security across the Arm ecosystem.
+ **Developer Access**
  Accessibility and performance for developers through Arm software and tools.

Prepare for Tomorrow's Compute Workloads

The Arm Total Compute Solutions focus on three key pillars – compute performance, security, and developer access – to provide a holistic system approach to supporting the compute workloads of tomorrow seamlessly and securely.

As new devices, use cases, and applications continue to proliferate, expand, and advance, Arm Total Compute Solutions evolve with each generation and span across Arm's broad range of technology components, including hardware IP (Armv9 CPUs, Immortalis and Mali GPUs, Interconnect and System IP technologies, Cortex-M and Cortex-R CPU processors), physical IP, software, tools, and standards.

Performance for Advanced Requirements

A solutions-based approach to design enables increased chip performance and efficiency to support more advanced compute requirements. This is further enhanced by the influence and scale of the Arm software ecosystem that optimizes application experiences. All of this allows silicon vendors, OEMs, and developers to respond quickly to increasing user demand for innovative digital experiences on next-generation devices.

The Total Compute Solutions

Arm Total Compute Solutions address all consumer device markets, offering different levels of performance, efficiency, and scalability to deliver specialized compute.

Premium Total Compute Solutions: industry leading performance across flagship and premium smartphones, and laptop and desktop PC devices.

Performance Total Compute Solutions: a wide range of performance, efficiency, and scalability points across multiple device segments.

These include mid-range smartphones, Chromebooks, virtual reality (VR) headsets, and premium DTVs and set-top boxes.

Efficiency Total Compute Solutions: the best levels of efficiency for entry-level smartphones, lightweight XR wearable devices such as AR smartglasses, and mid-range and entry-level DTVs and set-top boxes.

Total Compute Optimizations

Optimizations and accelerations are available across the following areas:

– *Gaming*: Hardware IP improvements across Armv9 CPUs, Immortalis and Mali GPUs, and Interconnect technologies deliver more immersive gaming experiences for longer.
– *Machine learning (ML)*: Advanced ML capabilities with a range of new features and optimizations help redefine device experiences for the end-user.
– *Security*: Enhanced security across three key layers – in-process security, security firmware, and Trusted Execution Environment.
– *Software and tools*: The latest fully optimized software features are ready to be rapidly deployed and customized by developers.

Benefits of Arm Total Compute Solutions

– Compute performance for the workloads of tomorrow.
– Comprehensive, in-depth security across the ecosystem.
– Quick and easy access to software and tools for developers.
– Fully scalable solutions for all device segments.
– Enhanced user experiences on next-generation devices.

For more information on Arm's Total Compute Solutions visit:
https://www.arm.com/markets/consumer-technologies
For more information on Arm's Total Compute strategy visit:
https://www.arm.com/solutions/mobile-computing/total-compute

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