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KEYNOTE 3: 4IR and opportunities within the next decade of compute: The era of Specialized and Confidential Compute

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The Arm ecosystem has defined the last three decades of compute technology and will continue to do so for a long time to come. Arm's ambitions for the emerging markets are consistent with our vision towards deploying technology that enables opportunity for a globally connected population.

The new Armv9 architecture forms the leading edge of the next 300 billion Arm-based chips. It includes the Arm Confidential Compute Architecture (Arm CCA), a key feature of Armv9-A, and the next step in transforming the trust model of compute environments in every application. Armv9 is also driven by the demand for increasingly specialized, secure, and high-performance processing built on the economics, design freedom and accessibility of general-purpose compute.

Confidential compute is important for client devices. The Arm CCA security features will make their way across all tiers of computing applications, and help to protect IoT sensors, handsets, laptops the Internet and the cloud. As digital transformation activities mature across emerging markets, public and private stakeholders are focused on ensuring that security remains at the forefront of their national interests. In the next decade of compute, the digitization activities around data sovereignty, information security and national security interests will be critical, and policy stakeholders in these markets will embrace programs and practices with a focus on security innovations that ensure competitiveness and preserve competitive advantages.

In support of these innovations, Armv9 is geared to change the economics and expectations for new and evolving technologies around 5G, cloud, and HPC. Performance-wise, the v9 instruction set is an upgrade of Arm's Scalable Vector Extension technology (SVE). SVE is currently used in the Arm-based Fujitsu A64FX chip that powers Fugaku - the world's fastest supercomputer - and SVE2 opens a range of new approaches to deploying more powerful AI across the Cloud, Edge, and endpoints.

In my proposed presentation, I will discuss how the Armv9 architecture will influence the next decade of compute, while supporting critical activities that allow emerging market stakeholders to fully embrace multi-sectorial digital transformation and participate in the Fourth Industrial Revolution (4IR). I will share ecosystem driven solutions that showcase the transformational power of Confidential Compute, and highlight how the Armv9 architecture, driven by our broad ecosystem, is delivering best-in-class solutions for Cloud, Edge and Endpoint AI needs for all tiers of ICT stakeholders.

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No

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