

Challenges of Digital Consumer and Mobile SoC's: More Moore Possible?

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Abstract: Digital consumer and mobile products have continuously accommodated more features and functions. For example, the recent high-end cellular phones can operate as terrestrial digital TV viewers, MP3 music players, digital cameras, substitutes of credit cards and many more in addition to multi-modal wireless communication terminals that handle various formats; GSM, 3G, BT, WiFi and so on. These products require to best combine highly integrated SoC's and sophisticated software stacks in a timely manner. It is essential to establish a hardware/software co-development/verification environment with an ESL design methodologies and an IP reuse platform where various functions are realised on an SoC by legacy sub-systems with a low-power multi-processor architecture. This challenge gets more complicated in deep sub-100 nm technology nodes. Approaches to these complex problems from different aspects will be presented.