UFS Host Considerations & System Benefits

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- Hung Vuong is a Director of Standard lead in the QTI system architecture team in Qualcomm in San Diego. His responsibilities include standard interface developments, and connectivity technology planning for Qualcomm's future products

- Prior to Qualcomm, Hung held similar role in Texas Instruments Wireless Business as a system architecture defining interfaces roadmap for OMAP Application processor.

- Prior to Texas Instruments, Hung was at Motorola as a system architect & designer for Motorola phones

Key UFS Features – SoC's Perspective

- The interface:
  - ~600MB/s with MIPI M-PHY Gear3
  - High-speed low-voltage serial interface
- The UFS device
  - Command queuing
  - Out-of-order CMD execution
  - Multi-LUN support
- But it's not about the interface or UFS device, changes are to the host SoC as well
  - Standard Host Controller (HCI)
  - CMD priority
  - Interrupt aggregation
  - Doorbell definition
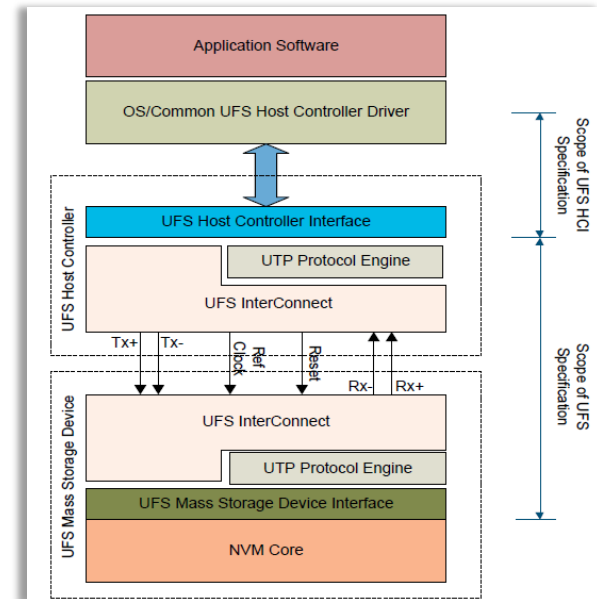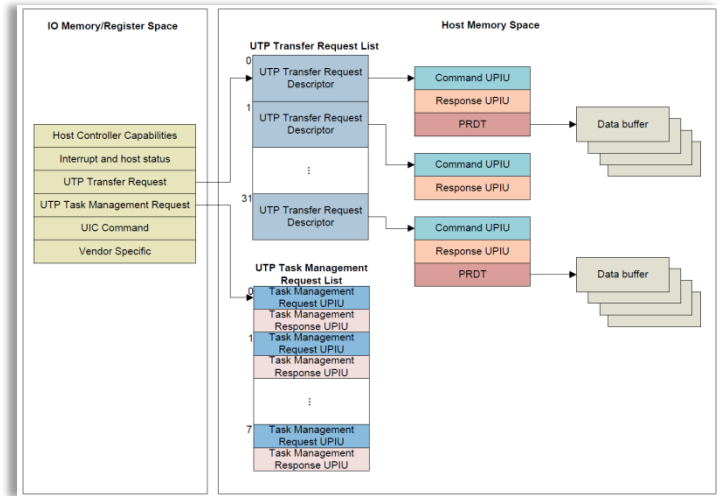
UFS System Considerations & Benefits

- Storage interface - optimize data transfer & minimize host SW interaction
  - Low interrupt overhead
  - Efficient host memory buffer usage for data transfer
  - Efficient status return mechanism

- System SW eco-system
  - Impacts to Apps/OS/File System/Scheduler/Driver

- Usage models that can benefit from UFS
  - Quicker application load time
  - Richer content & graphic
  - App to app latency
  - Split/Multi-screens, multi-thread

Apps Switching Time

Split-screen

DVR