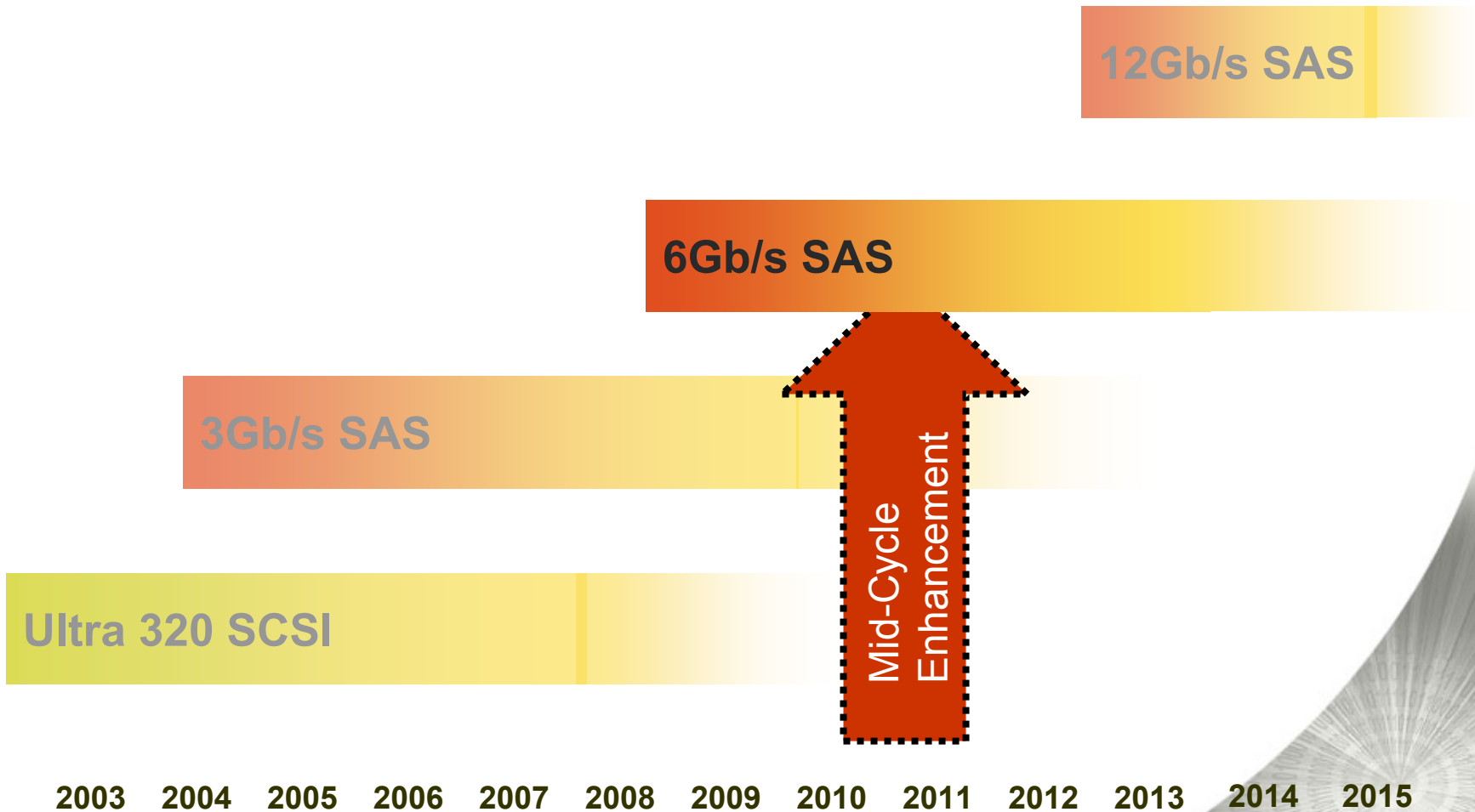


STA MRD for 6Gb/s SAS w/enhancements



Upping SAS connectivity and power management capabilities before 12Gb/s SAS

6Gb/s SAS Evolves



Mid-Life Enhancement (SAS 2.x)

- SAS 2.X specification (STA recommends SAS 2.1)
 - Improves data center scale-out
 - Improved cabling options
 - Distances >20M (~ 15m to be equivalent to FC copper?)
 - Extensible to SAS-3 (12Gb/s SAS)
 - Potential for optical connects
 - Exploring options (optical option preferred, although distance is TBD, 100m?)
 - Dense Connectivity Solution Options (x8, x16)
 - Green features for large storage farms
 - Power management options
 - Improved PHY management
 - Other SAS-2 clarifications, corrections
 - Time-Bounded Implementation
 - Much faster than SAS1.1 (3 years)
 - Minimal impact on SAS-3

All proposals should be completed by the Jan 09 meetings

STA MRD for 6Gb/s SAS Upgrades

- Improved Connectivity – Protocol
 - Active cabling solutions for 20M+
 - SATA round-trip time-outs unlikely to be a factor in projected usage models.
 - Supports a variety of active cabling solutions (including optical)
 - Low Protocol Impact
 - Must be extensible to 12Gb/s SAS
- Improved Connectivity - External
 - Requires Power at the SAS connector (like QSFP)
 - Desirable to have QSFP functionality consuming much smaller board space
 - Improved Serviceability
 - Cable swap event logging
 - Auto detect media type and allow for existing OOB operation ala SAS-2
 - NV storage to keep cable SKU info (type and serial number)
- Improved Connectivity – Internal
 - Allow for denser x8 or x16 connectors

STA MRD for 6Gb/s SAS Upgrades

- Improved power management – Low hanging fruit
 - Device Connect
 - SATA Drive functionality for SAS device
 - Box Connect
 - ????
- Usage Model
 - External
 - No impact to existing SAS usage
 - Extends connectivity for rack-to-rack, box-to-box, host-to-rack, host to JBOD, host-to-switch, switch-to-rack, Switch-to-JBOD and cascaded SAS Scale-out environments
 - Improved Serviceability
 - Internal
 - Dense high-port count connectors
- Market Window
 - Letter Ballot – Feb 2009
 - Minimal impact to SAS-3 definition/timing