



# SAS 2 – Moving Forward

January 09, 2006

Ahmad Zamer – [ahmad.zamer@intel.com](mailto:ahmad.zamer@intel.com)



# Introduction

- **Technology transitions**
  - Times for new challenges and opportunities
  - Technologies and ecosystems change
- **6G-3G link aggregation is the major crossroad**
  - Handle with care
  - Keep competition in mind
    - Avoid introducing complexities and confusion
    - Avoid forcing higher costs
  - Leave the door open for future progress
    - Keep future usage models in mind
    - Consider long-term needs
    - Allow each SAS element to evolve independently



# 6G-3G SAS

- One proposal on the table
  - Alters initiator and expander PHYs
  - Increases costs for initiators and expanders
  - Threatens adoption of SAS on motherboard
    - Will OEMs pay more for SAS controllers?
    - SAS on motherboard is NOT a FRU
  - Impact on Applications or OS?
- Intel will submit a new proposal
  - Targeted date before March 2006 meetings
  - Proposes link aggregations in expanders
  - Increase cost of some expanders
    - Current expanders costs are not affected
    - Increases costs of link aggregating expanders
  - Does not impact other ecosystem component

OS and  
Applications

Controllers  
& HBAs

Expanders

Storage Devices &  
Solutions

# Moving Forward



- **Don't rush into multiplexing**
  - Allow 6 months for new proposals
  - Consider all options before making decisions
  - How about SAS 2.1 for multiplexing?
- **Revisit the hard drives issues**
  - If 6G tape will make it, why not hard drives?
  - What can be done to help accelerate hard drives availability?
- **Commission a customer survey**
  - Will customers pay more for 6G SAS?
  - Do customers want 6G SAS without faster hard drives?
  - Other customers' concerns?



# Storage Networking Technology

