

# Considerations for 100G-SR

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# Outline

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# Introduction

- Copper has always been cost effective where it can reach
- Server port speed interconnect is expected to hit a wall where passive copper may no longer have a useful reach for server connectivity
- Very high-volume application
- Opportunity to provide alternative to copper for this high-speed application – but cost remains most important criteria. Users will be technology-agnostic
- The study group has the opportunity to open a new market space for optics

# Summary of Application Assumptions

- This is a green field application for optics that would enable MoR switch architecture in data center design
  - Cost sensitive
  - Low cost will be driven by choices supporting infrastructure as well as PMD
- Volumes should be very high (comparable to existing copper connections)
  - Hyperscale data centers will be the largest consumers
  - Solution must be able to scale quickly with volume
- Time frame for deployment should begin within 3 yrs
  - PMD should must be able to operate on platforms that exist in this time frame as well as migrate in the succeeding 5yrs continuing to be best in cost for the reach

# Considerations for the Study Group

- Study group should focus on the target
  - Don't be distracted by applications that dilute the solution
  - Very high volume requiring low total cost of implementation
  - Solution should be a clear winner on the target application
    - Greenfield application - there is no installed base of infrastructure
    - Careful not to ignore incremental improvements in copper that could fragment the market
- Since the horizon isn't too far away, focus on reusing existing building blocks
  - SERDES, MAC, PCS, FEC, PHY, etc
  - Should be able to adapt with switch evolution, speed, radix, power consumption
- Study group should consider all options
  - Does an MMF solution offer differentiation in cost vs existing or further cost-reduced SMF solutions?  
Market potential is highly dependent on this answer
  - No existing optical infrastructure to leverage ROI

# Summary

- Exciting high-volume optical greenfield opportunity
- Market success will be highly dependent on meeting market expectations for low cost solutions
  - Therefore re-use as much as possible – (i.e. no new FEC)
- Target market is technology-agnostic. But highly cost focused