The Industry Perspective

• Standards:
  – What can be shared? to move from multiple niche market to an infrastructure that can support a diverse set of
    • Hardware infrastructure
    • Software infrastructure
  – Virtualization/Open Platform
• How can existent infrastructure be leveraged?
• Social and environmental implications
The Industry Perspective

• Education
  – Depth and breath: they are both needed
  – System level understanding of problems
  – Engineering ethics

• Software:
  • Parallelism: Distributed, multi-threaded, ...
  • Data volume: Giga and Tera are daily words
  • Interfaces: make systems that can be used
General Comments

• Detection:
  – Need to move from a single molecule, clean sample to the complex, “contaminated”, real life environment
  – Need to extend detection range to cover full logarithmic scale to accomplish bio-mimetic capabilities
  – Need to extend “shell life” to practical limits
    • Grow and shed?
  – …
  – When will we see something that detect “any” foul smell?
General Comments

• Design/Test:
  – Tool capabilities – respond to a diverse set of needs
  – Move from point tools (TCAD, specific) to a design perspective
  – Testability: From self test of components to system level validation

• System Level
  – The complete picture is a must (there is enough research/proof of principle on components) – but – will it work?
    • Materials, interfaces, processes, data management, performance, capacity
General Comments

• Transmission/Processing
  – What needs to be processed locally? what needs to be transmitted? What needs to be stored?

• Interfaces:
  – Do more remotely – less invasively

• Security
  – Privacy, intrusion, ...