

CompactPCI Outlook for 2001

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BUS & BOARD™





Major activities

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- ◆ Hot Swap
 - Revision 2.0
 - Outstanding ECRs
- ◆ Redundant System Slot
- ◆ PCI-X
- ◆ Networking support
 - Backplane
 - Gigabit Ethernet
- ◆ Switched system interconnects



Hot Swap Revision 2

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- ◆ Includes
 - Enhanced software connection architecture
 - 3.3 volt 66 MHz support
 - PCI-X compatibility
 - Compliance language
- ◆ Will likely be adopted by PICMG Membership on 1/17/01



Hot Swap Follow-on

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- ◆ Outstanding ECR's
 - “Nanobounce”
 - Distributed Hot Swap
 - Non-orderly extraction
 - Capacitance
 - System Control Hot Swap Connection
- ◆ PCI SIG Standard Hot Plug Controller



“Nanobounce”

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- ◆ Discontinuities ~10's of nsec observed at initial mate of pin and receptacle
- ◆ Impact on system performance varies from device to device
- ◆ Greater susceptibility in 5 volt signaling environment



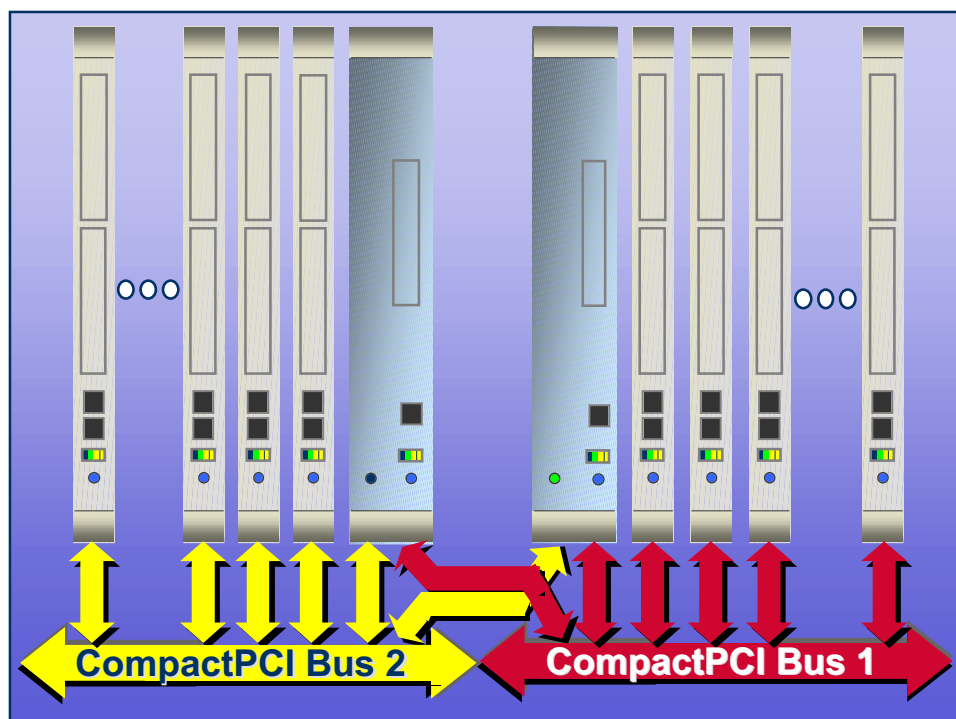
“Nanobounce”

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- ◆ Proprietary connector technology has been developed to address problem
- ◆ PICMG sponsored simulations have identified additional mitigation methods
- ◆ PICMG will complete its characterization and simulation work, and report results
- ◆ Input to Hot Swap spec possible

Redundant System Slot

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- ◆ PICMG 2.13 supports:
 - Redundant I/O domains
 - Redundant hosts
 - Backup peripheral processor



PCI-X



- ◆ PCI-X Addendum defines a register to register timing budget which appears to support
 - 3 CompactPCI slots at 133 MHz
 - 5 CompactPCI slots at 100 MHz
 - 8 CompactPCI slots at 66 MHz
- ◆ Split read transaction also improves bus efficiency
- ◆ PICMG sponsored simulation studies
- ◆ ECR to CompactPCI spec



Backplane networking

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- ◆ PICMG 2.14 (aka MCnet) defines a highly efficient write only protocol without the need for incremental hardware
- ◆ MCnet supports
 - TCP/IP over CompactPCI
 - Raw data transfer
- ◆ Hardware Independent
 - Shared Memory
 - Scalable Approach To Support Special Hardware
 - Processor Independent



Switched Ethernet

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- ◆ PICMG 2.16 defines a high aggregate BW, more highly deterministic networking environment targeted at a converging communications infrastructure



Switched System Interconnects

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- ◆ Switched I O addresses many of the challenges currently facing **CompactPCI** ...
 - Higher aggregate bandwidth
 - Better fault isolation
 - Improved scalability
 - Multiple protocol support
- ◆ PICMG's member-driven initiatives will gradually incorporate one or more of these technologies as a complement to CompactPCI



In summary ...

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- ◆ CompactPCI will continue to evolve, meeting the challenge of improved availability and scalability
- ◆ CompactPCI will emerge as a key to the smooth migration from bus oriented to crossbar switched IO subsystems