HPRCTA Panel Discussion

Allan Cantle – President and Founder
Company Overview

Leading supplier of high performance computing solutions

Over a decade of experience in FPGA computing

Focus on HPC & Defense sectors

Commercial, rugged and reliable solutions for deployment

Strategic partnerships with Intel, Xilinx

Consistent Growth in Revenues (2000-2006)

Over 4,000 customer installations worldwide
Vision for Reconfigurable Computing

A processor that is capable of morphing itself into the most efficient implementation for any given computing problem.
HPC Product Strategy – FSB & PCI Example

Analog I/O Series

- Data acquisition and analysis
- Triple play – Voice, Video, Data
- Internet, Search
- Visualization
- Real-Time & Deterministic

Digital I/O Series

Intel’s processor centric MP Xeon platform

- System Memory
  - 21GB/sec (peak)

- North Bridge
  - PCIe x8
  - 2 + 2GB/sec

- South Bridge
  - PCIe x8
  - 2 + 2GB/sec
  - FSB
  - 8.5GB/sec (peak)

- Intel
  - 10GB/sec

- FSB
  - 10GB/sec

I/O Scaling using Nallatech’s Modular DIME-II Architecture

Deep Scaling using Nallatech’s Multi-FPGA DIME-II Architecture
Anticipated Challenges & needs

» Legacy Code in a Parallel Computing World
  » Consultancy and training organisations helping transition

» Inexorable march from Heterogeneous to Polymorphic
  » Compilers that can target Heterogeneous Architectures
  » Picking Winners and avoiding Losers in the move to Polymorphism

» New breed of “computing architecture aware” software engineers
  » Take a step back to make a move forward