I2O

Intelligent RAID Module

I2O

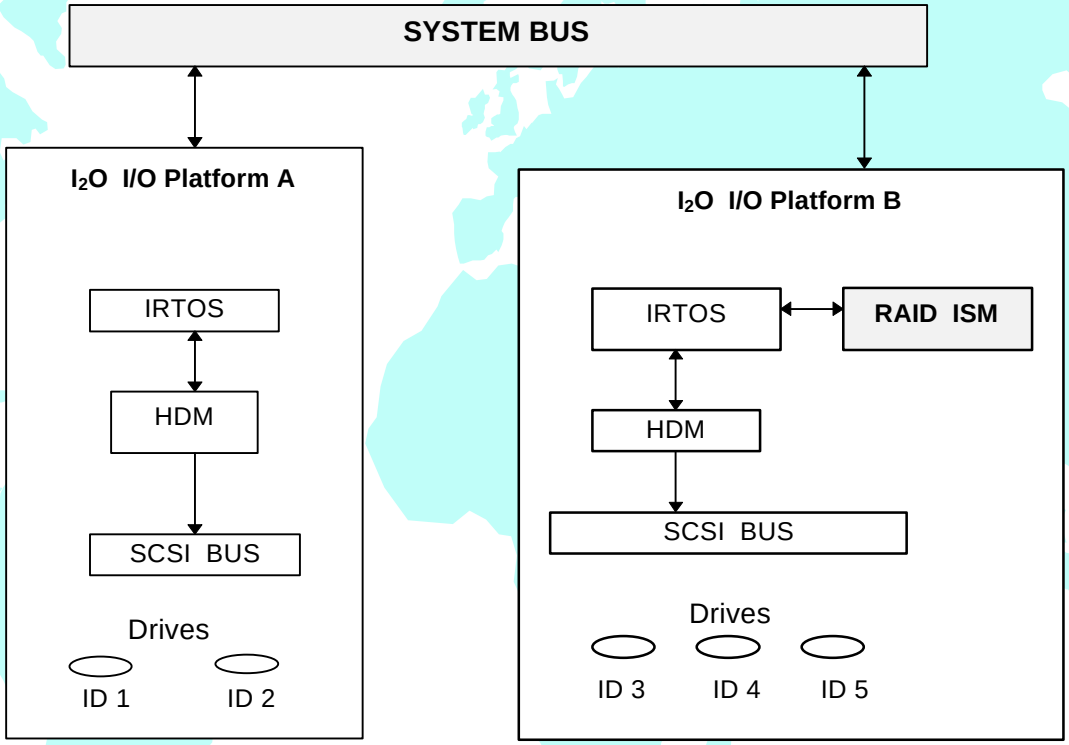
PCI Spring Developers' Conference and Expo

K. K. Rao and Dawn Tse
Mylex Corporation
(510) 796-6100

I2O SIG

MYLEX

RAID Module

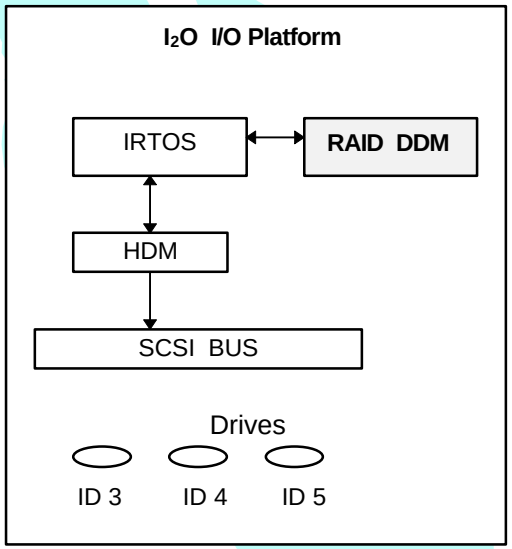


- **Hardware Architecture - IOP platform**
  - Independent of microprocessor, bus, or controller type
- **Firmware - I_2O compliant ISM (DDM)**

Benefits of Design Approach

- Efficient use of system resources
- Hierarchical RAID is easily configured
- Controls physical devices through HDMs
- Capacities no longer limited by bus configuration
- Fail-over to protect cache data is easily implemented
- Loadable to any I_2O compliant IOPs
- Shortens time to market

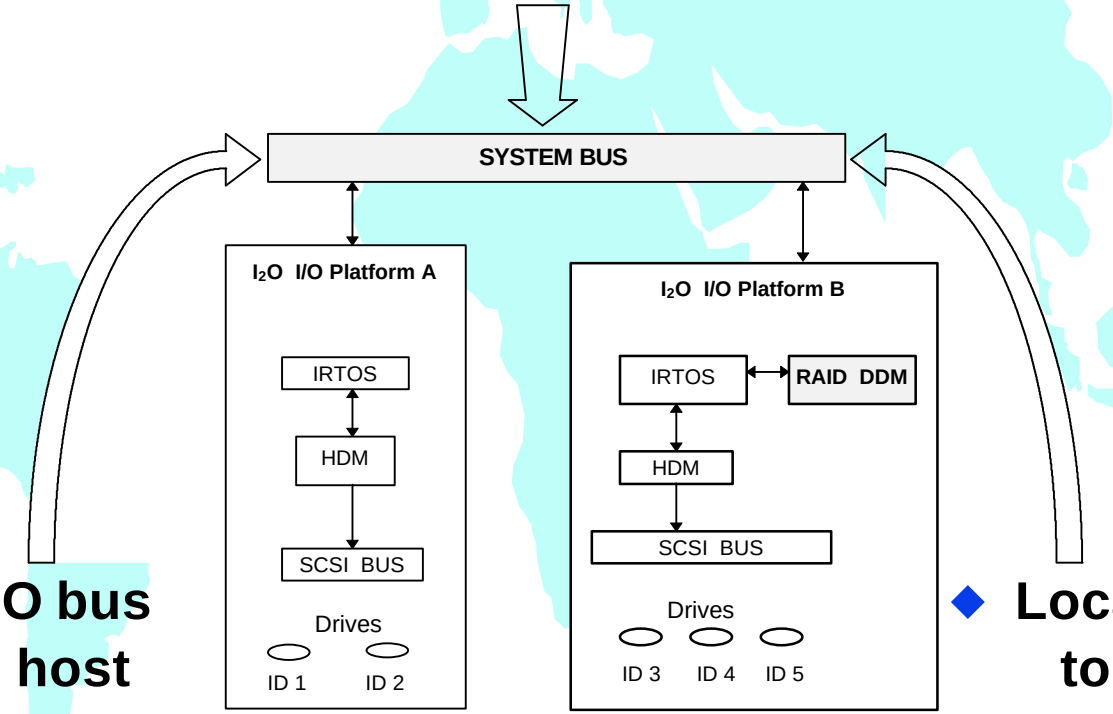
Operating Environment



- IOP - microprocessor, memory and IO devices
- RAID ISM - high-performance and fault-tolerance
- RTOS - provides APIs
- HDM - controls physical devices
- Coexists with other I2O compliant DDMs or ISMs

RAID Data Path

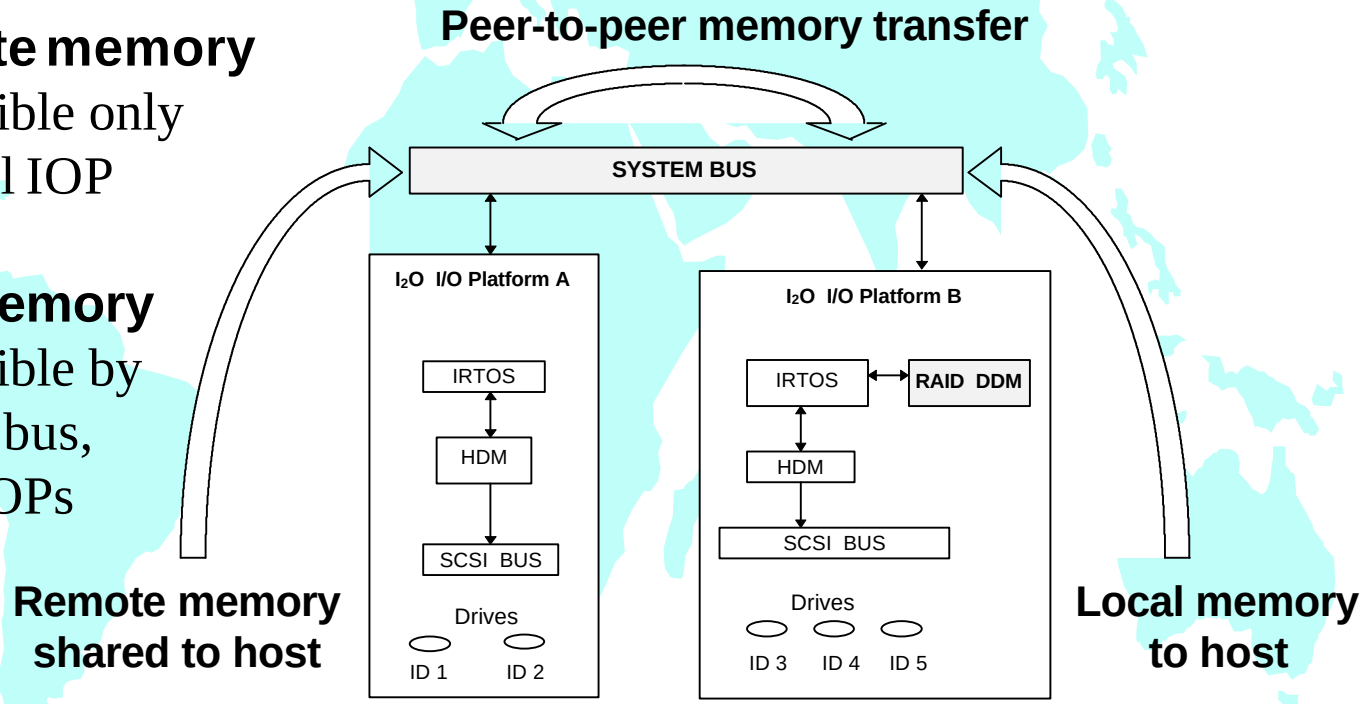
- Between shared memory and host memory
  or
- Removed shared memory and local shared memory



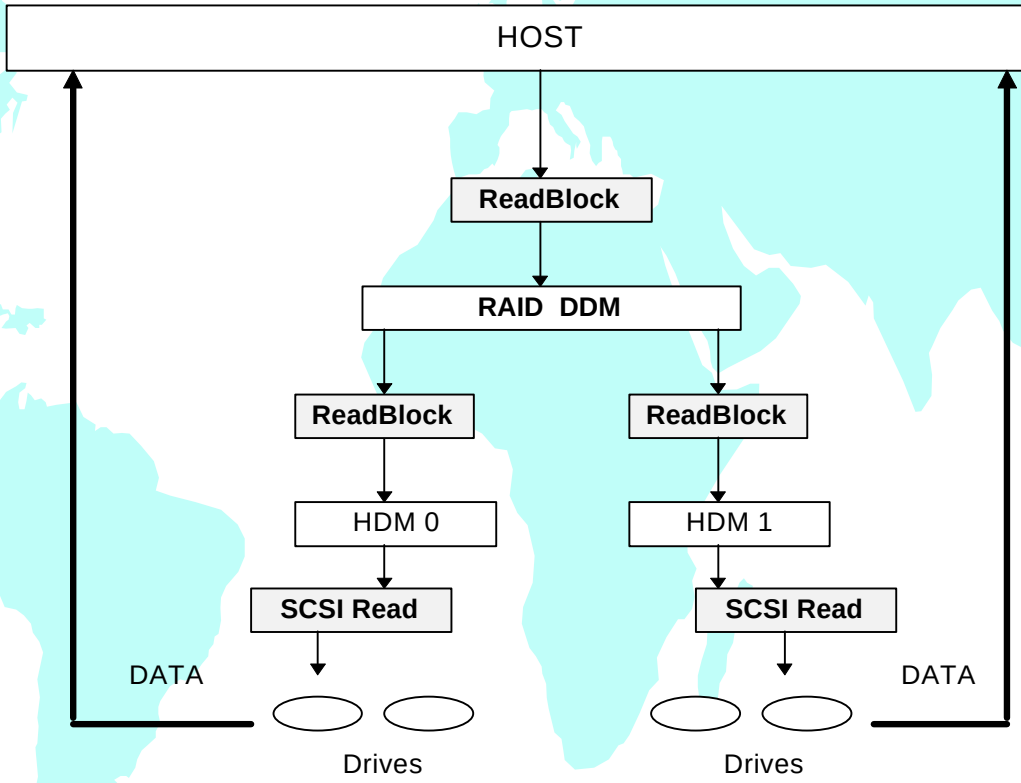
- Remote IO bus direct to host
- Local IO bus to host

RAID Memory Modes

- **System Memory**
  - Accessible only from system bus
- **IOP private memory**
  - Accessible only by local IOP
- **Shared Memory**
  - Accessible by system bus, other IOPs



RAID Read Operation



RAID Write Operation