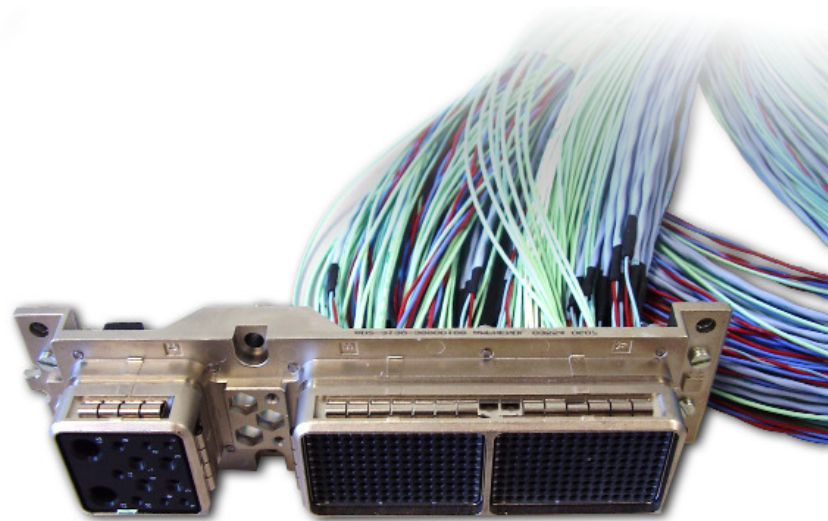


Flexible Automated RT System

for Test, Measurement and DAQ

Characteristics:

- High Performance Real Time System
- High Performance Real Time Device
- Multithreaded Linux Operating System
- Multiprocessor Architectures
- RT optimised encapsulated S/W Kernel
- Load and Task balanced I/O throughput Process
- VSystem high Performance Application Software
- Client/Server Network Process Architecture
- Monitor & Control Tools for Load or Time Violation
- Channel Data Structures Information
- Data Conversion, Time Stamping
- Alarm Notification
- I/O Information, Limit Check
- Resolution Information
- Mathematical Equations (Smoothing or Filtering)
- Channel Calibration Features
- Expandable I/O Hardware using Backplane Chassis
- Supported Platforms (Unix, Linux, Windows)
- Vaccess Database implemented on shared Memory
- Direct Access to the RT Database per S/W API
- Stand-Alone Test Management System
- Long Term Storage System
- Integrated Online Visualisation
- Integrated Offline Visualisation
- High Speed Ethernet Network



Flexible Automated RT System

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Multiprocessor architecture

The multiprocessing Real Time system concept is based on a Concurrent™ high-performance computer platform that is typically used for real-time data acquisition, I/O preparation and control of industrial test & measurement application system.

The basis for the hardware design concept is a selectable backplane form factor (VME, PCI, cPCI, PXI, VXI, etc.) or any type of bus communications protocols for the required I/O hardware. The form factors can even be mixed, e.g. VME and PCI I/O boards. The Concurrent™ iHawk Real Time computer with its internal PCI-X and PCI-Express bus system is attached to the backplanes that allow a flexible expansion of the system and the insertion of multiple I/O boards. A modular short and long term storage system (RAID) is attached by an Ethernet network. Data visualisation or evaluation (client/server solution) will have no impact on the Real Time performance.

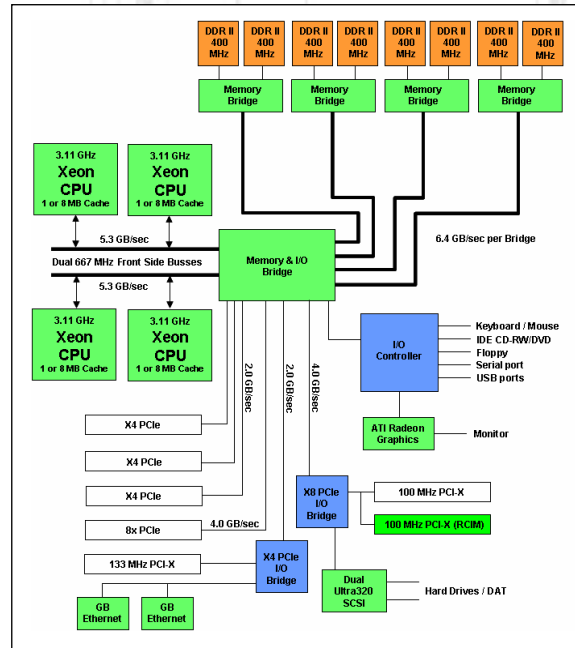


Figure: H/W Architecture of the multiprocessing Real Time System iHawk

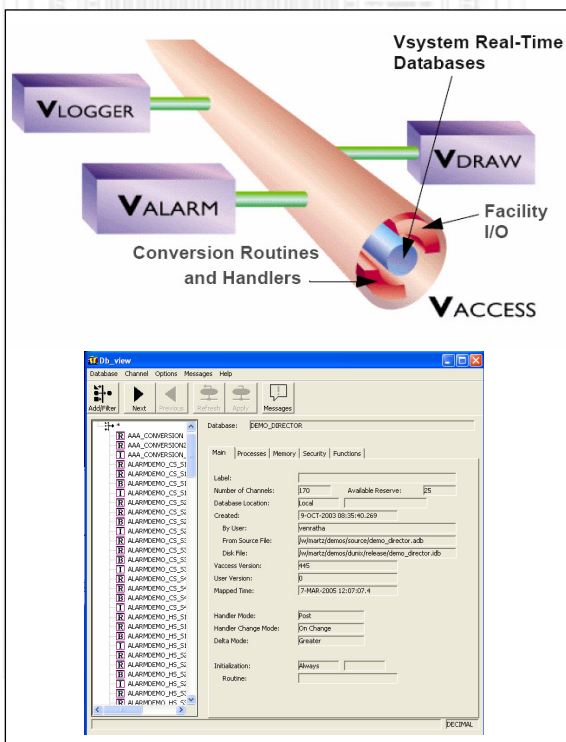


Figure: Vsystem Application Software Structure

The basis for the software concept is the layer architecture with an open interface structure. Open source software like Linux with specific standard interfaces offers an effective combination of functionality and extensibility.

The main feature of the data acquisition application software is the Real Time database Vaccess which is the main part of the package Vsystem. Vaccess is acting as a central communication platform for all relevant tasks. The database reduces the cross data transfer which reduces latencies in the whole system.

Vsystem offers the functionality of logging, archiving, monitoring, and online and offline evaluation.

The system concept provides a great amount of configurability. Configurable items are the I/O devices, control and protection software, as for example the alarming function of Vsystem. The human machine interface (HMI) is customizable to the correspondent needs of the measurement system user.