Introduction

The IPSS Data Collection and Analysis System (**DAS**) will obtain process data from PLCs, computers, HMIs, or process devices and can store this data on the server computer. This data is available to multiple users for online trending and viewing and data is archived for later retrieval. Data is typically keyed by coil number in addition to the standard time series data collection in order to facilitate examination or review.

System Features

HMI Capability: Current alarms, tracking screens and real-time data displays are available for operators, process engineering, and maintenance personnel.

Product Tracking: This is a custom module created for your specific mill. The DAS system can use actual mill sensors to initiate data capture and store data for each coil.

Historical trending: The DAS maintains long-term history for playback and analysis. Online storage time is typically only a function of system scan-time and available disk space.

Computer Platforms: OpenVMS (Alpha or Itanium) & Windows (PC)

I/O Scan Time: The DAS system receives multiple scans per second (typically set at 20-50 Hz with speeds now up to 1000 Hz). A real-time database permits local and remote access to data. The increased speeds can be achieved depending upon the data acquisition interface and the capability of the data sources.

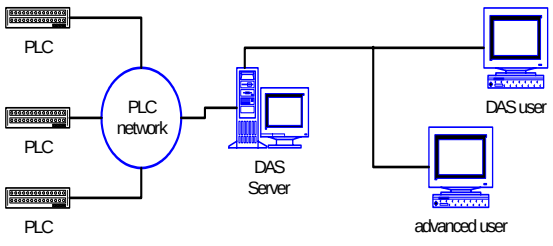
Data Sources: VMIC Reflective Memory, GE CSF, Siemens, AB (others on request)

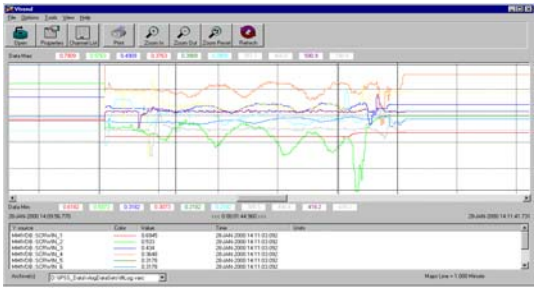
Statistical Functions: Increased functionality is made available by adding an optional integrated data analysis module (Iba Analyzer).

Documentation: IPSS provides a User's Manual and Troubleshooting Guide customized to your specific installation and equipment configuration.

Product installation and training: An IPSS field engineer delivers the system and performs final configuration changes, checks custom screens, and provides customer training.

Customization: IPSS can tailor the system to your specific requirements or users can do this after installation as all the source code is provided.





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Stored Data:

Piece Logs – Data is stored to disk and saved using the piece number for the file name. Engineers and maintenance personnel will use these files to help solve product and process related problems (e.g., control system instability, cobble analysis, etc.). For each piece, the DAS will create "slow" and "fast" logs, where slow logs contain data collected at the slow rate (currently 50Hz) and the fast logs contain data collected at the fast rate (currently 1kHz).

Continuous Logs – A set of user-defined signals are collected continuously and stored to a circular log file (i.e., a fixed-length file). When the logging process comes to the end of the file, it will start overwriting the contents at the beginning of the file. This file will be used to help solve process-related problems.

Demand Logs – A set of user-defined signals are collected on-demand whenever a user clicks on the Start Demand Log button from the DAS' Trends screen. This is useful for solving unusual, chronic problems (e.g., hydraulic cylinder sticking).

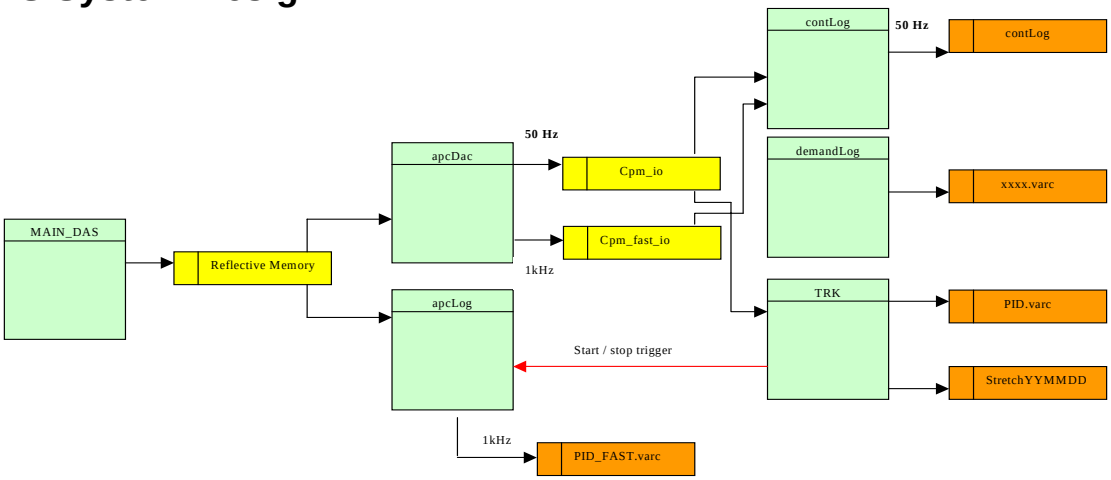
Viewing Data:

Real-time data - is viewed using HMI screens developed using Vdraw, part of the Vsystem product from Vista Control Systems, Inc. For ad-hoc data displays, the DAS provides an electronic version of an 8-channel chart recorder. Users may assign any one of the collected data points to one of the 8 pens. After assigning the desired data points, the user selects how to plot the data (on 1, 3, 6, or 8 different charts). Users may also develop custom screens using Vdraw that present specific data in the best possible way.

Historical data – can be viewed and analyzed with Vtrend, which allows the users to quickly and easily see stored data and perform some simple analysis (mean, min, max, standard deviation). Users can zoom in on any part of the displayed data.

Statistical data – can be viewed and analyzed using the IbaAnalyzer (a Vsystem module supplied by Iba GmbH). It permits users to perform complex analysis on collected data such as FFT, digital filtering, X Y plot, trig functions, etc.

DAS System Design:



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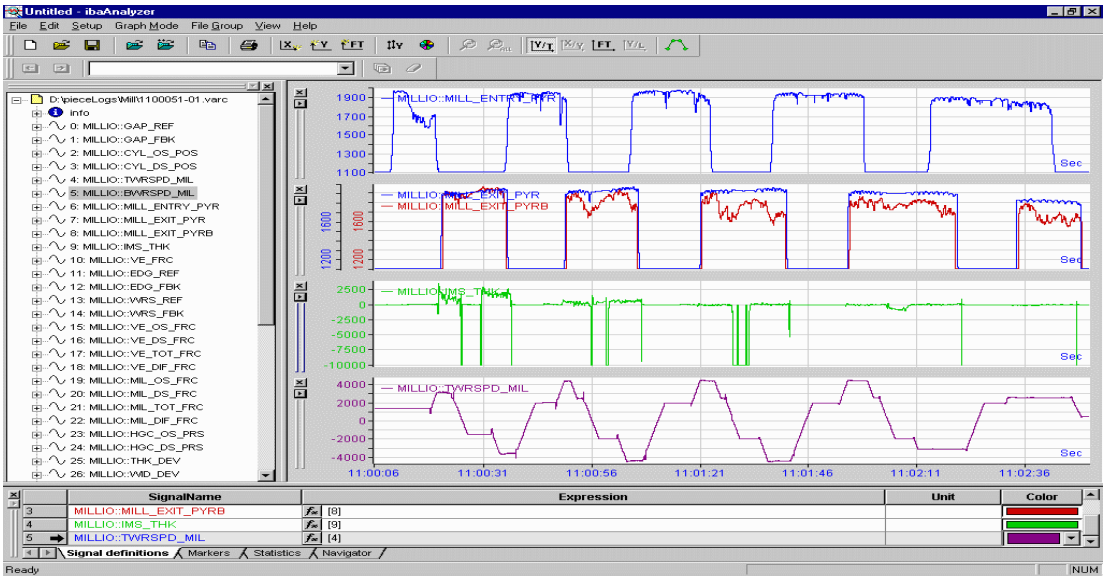
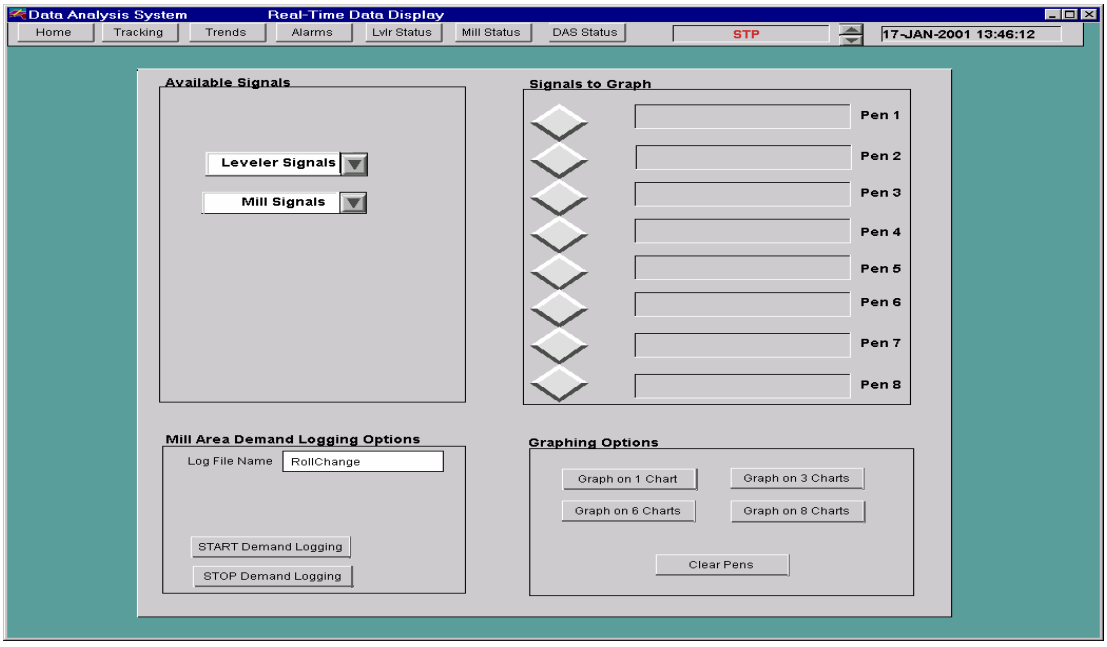
Sample DAS Screens:

Iba Screen



Trends Menu



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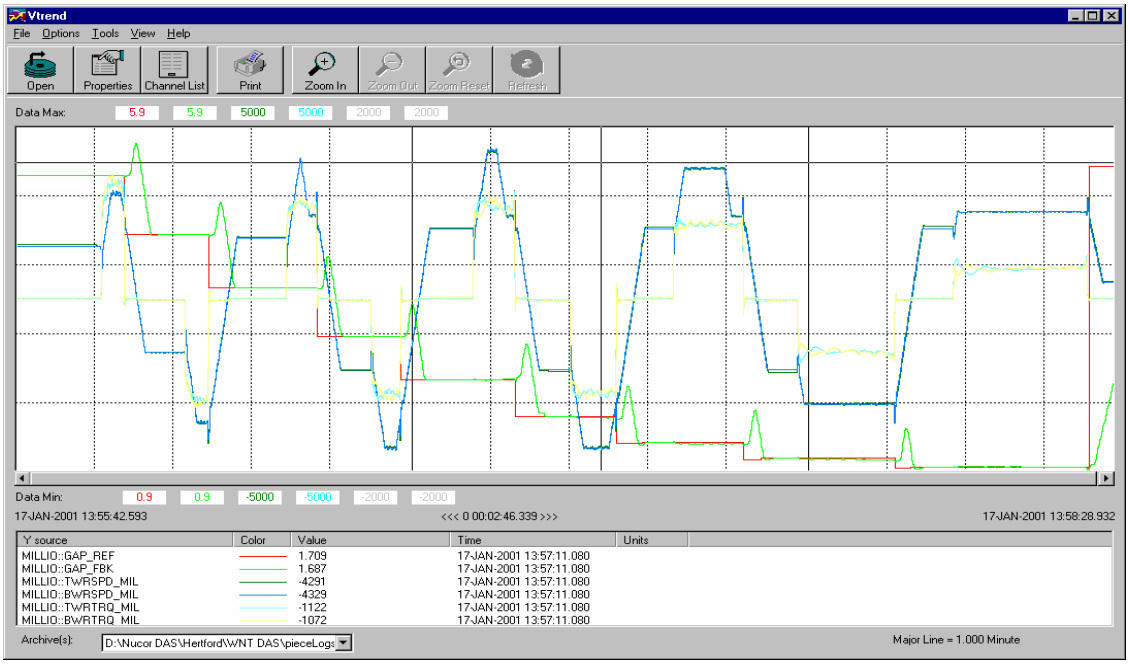
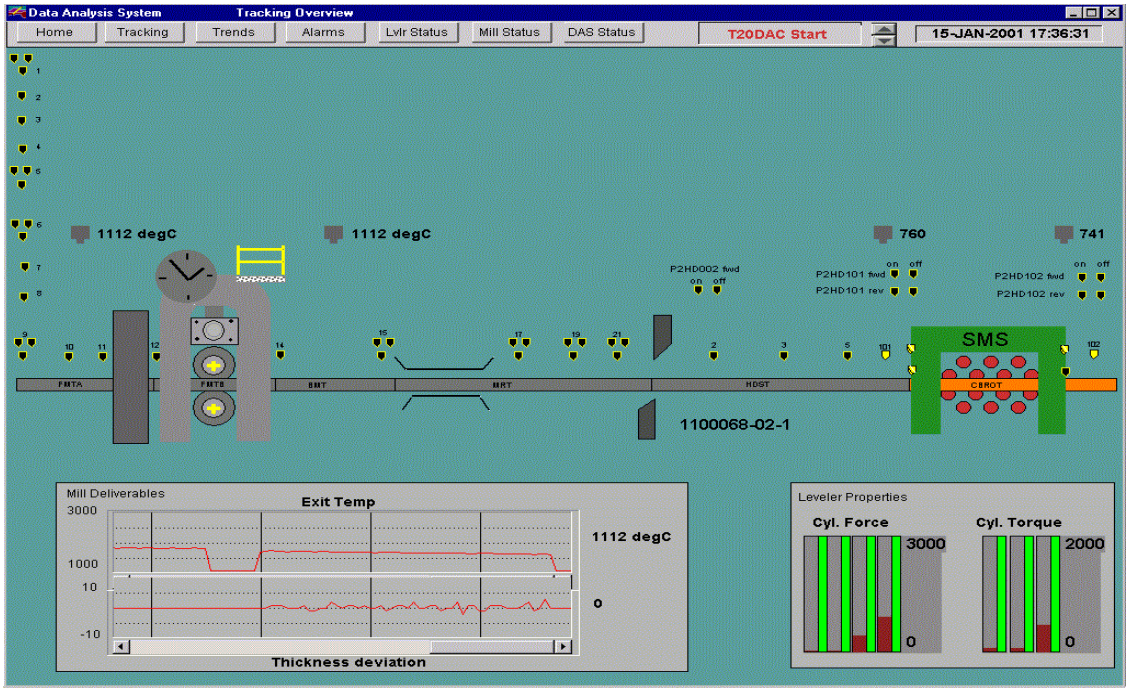
Vtrend Display



Tracking Display



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