

The Industrial Interface Company (NZ) Ltd, is pleased to offer you...

Proficise

Issue One - June 2005

Welcome to the inaugural issue of our new HTML based newsletter – Proficise. After a seven-year run, we have retired the "A Shot of Red *i*" name and have re-branded, to bring our newsletter in to line with our other GE Fanuc offerings.

Since GE Fanuc's acquisition of Intellution, IIC has been inundated with a huge range of new products. It's not only new products either, we also have access to established NZ based resources such as GE Energy and GE Money; and an existing engineering base with many years of experience in GE Fanuc hardware.

This newsletter covers the current status of two of our traditional software products and introduces two new solutions; one software and one hardware, as examples of the spread of technology we are now able to provide.

In this edition, we cover:

- [Product Update - Proficy iFIX v4.0](#)
- [Product Update - Proficy Real Time Information Portal v2.5](#)
- [New Product - PACSystems - Control Memory Xchange \(CMX\)](#)
- [New Product - Proficy Change Management \(PCM\)](#)
- [IIC Address - Reminder](#)

As always, if there is anything that you would like covered in a future issue of Proficise, please let us know as we are always open to suggestions (proficise@iic.co.nz).

Product Update - Proficy iFIX v4.0

A new version of iFIX (v4.0) is scheduled for release later this year. Below is a taste of some of the new features on the way; we will expand on this, as the product gets closer to release.

Better layering on Competitive and GE products

- * Improved drivers, auto discovery and simplified configuration of leading programmable controllers

Improved Developer and Operator Productivity

- * Enhanced Drawing Tools - Pipes, Connection Objects, Line Commands
- * Enhanced Operator Controls - Right Click Menu for Tag Status and Quick Trends

Intelligent Real-time Data System and Database Model

- * Browse and organise iFIX tags and alarms via Database Model (equipment model)
- * Filter alarms and navigate screens via Database Model (equipment model)

Extending iFIX through Portal Clients

- * Web portal access to iFIX data via Proficy Historian
- * Embed iFIX screens in Web Portal

Advanced System-wide License Management

- * Centralised licensing
- * Multiple Proficy products on Single License

Additional Product Enhancements

- * VisiconX, Write functionality (Read only today)
- * FIX Desktop Integration - now supports Terminal Server
- * Biometric Device Support (thumb print reader, retinal scanner, etc)
- * OPC A&E Server and OPC A&E Client

FIX32 users - since the release of iFIX v3.5 with FIX Desktop there has been a simple migration path from FIX32 to iFIX. The FIX Desktop option allows users to run their FIX32 application, without modification, under the iFIX environment. This provides the ability to utilise today's operating systems (Windows XP and Windows 2003) and up to date hardware support (USB keyboards, etc). The FIX Desktop option also allows users to take advantage of iFIX features, such as the background scheduler and backup/restore wizard and allows users to migrate graphics to iFIX at their own convenience.

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**Product Update - Proficy Real Time Information Portal
v2.5**

The new version of the Real Time Information Portal (v2.5) is scheduled for release in the next three weeks. Portal is GE Fanuc's universal code-free web client with drag & drop and point & click functionality, which can connect to almost any data source. This latest version includes so many new features, that brief descriptive bullet type descriptions are the best way to get them into this newsletter:

Improved performance for remote Portal clients - up to tenfold.

- * Improved throughput on limited and low bandwidth connections (ADSL, etc)
- * Loading Client application components on-demand

Content sharing inside Portal (Hosting) - make Real Time Information Portal your universal interface

- * Create customised content in the Portal System Tree to provide a single Web application or "Face" to the information
- * Link to other pages & applets to embed content from other sites and services in the Portal
- * Access work instructions, safety guidelines, equipment set-up, user guides, etc
- * Embed 3rd Party Web content within Portal - "Frame" component, Rich Content, Dynamic connections & parameters, browse Plant Model, Drag-and-Drop Data Summaries, Auto-Generate Line, Unit and Variable lists

Extensibility built-in - the ability to define new types with no distinction in usage between system defined and user defined types

- * Base Connectors "functionally" complete extensibility throughout
- * Custom Stored Procedures can be added to Connector to extend functionality
- * Leverages standard user interface panels
- * Connections automatically exposed

External content: Using wizards to quickly and easily link content from Plant Applications to Real-Time Information Portal.

- * Integrated Security
- * Browse report & Dashboard library
- * Custom folder and link layout
- * Bulk configurations

Add-Hoc Drill Down analysis - for improved Usability

Alarms, Events & Expressions

- * OLEDB Connector to Proficy Historian for access to OPC Alarm & Events
- * Grid Chart and Grid Support
- * Client Side Expression Support

Improved Interoperability and Security

Secure web site support

- * Support for HTTPS
- * Java RMI over SSL
- * Domain Group Integration
- * Security Configuration Guide

Apache support

- * Integrated Apache WebServer Support Into Install Routine
- * Apache WebServer Configuration Guide

Scheduled reporting

- * Scheduled at Server Level
- * Send to any attached printer

Improved time controls

- * Connect display time to symbols
- * Pass time as string
- * Improved Configuration

Exposure to additional system properties

- * Object Names
- * Chart Properties
- * Extended symbol model to allow the re-use of a symbol multiple times within a display

If you have not seen or evaluated this revolutionary reporting and analysis product, please contact [Chris](#) to arrange a free trial.

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New Product - PACSystems - Control Memory Xchange (CMX)

PACSystems - Control Memory Xchange (CMX) is an ultra high-speed shared memory architecture that provides a simple, yet powerful, method of enabling multiple devices to share large quantities of control data over a fibre-optic deterministic network. With speeds up to 200 times faster than Ethernet, CMX takes automation performance and reliability to a new level. CMX allows the sharing data from applications on separate computers and Programmable Automation Controllers (PACs), without the involvement of an operating system.

CMX offers far greater bandwidth and through-put than conventional industrial control networks, such as Ethernet, Profibus, and DeviceNet. Once the Control Memory Xchange controller writes data to the shared memory, the data is immediately broadcast to all other nodes on the network at rates up to 174 Mbytes per second. CMX modules are available across multiple platforms (PMC, PCI & VME interfaces), to help users create their own high speed, real time, multi-vendor, deterministic network.

A CMX module can be inserted directly into the backplane of multiple GE PACs (and Rockwell's Controllogix); these modules are then linked via fibre to provide synchronised data tables to all modules on the network. A PCI CMX card can also be installed into a PC so that the data is shared immediately with PC applications.

Data exchange characteristics

Type	Control Memory Xchange	Gigabit Ethernet	Fast Ethernet
Theoretical sustained data rate	1392 MB/sec.	800 MB/sec.	80 MB/sec.
Maximum distance node-to-node	10 km	100 m	100 m
Maximum # of nodes	256	Unlimited	Unlimited
Topology	Ring	Star, hub	Star, hub
Error handling	Yes	Yes	Yes
Deterministic	Yes	No	No
Cabling	Fiber	Twisted pair/fiber	Twister pair

High Speed Data Acquisition (HSDA)

Using the High Speed Data Acquisition (HSDA) interface, data can also be fed directly into Proficy Historian (and viewed in iFIX and Portal). HSDA can read all of the data tables within the control system 100 times per second (10 mS resolution) or more. The data from PLC's, drive controllers and similar control systems can help you optimise and improve maintenance of automated, complex, repetitive operations.

This solution is ideal as a Black Box recorder, monitoring and recording thousands of digital and analog signals at a resolution of 10ms, this amount of data would obviously create large archives but only needs to be stored for a short time. In the event of an unexpected plant event such as failure of a process or the shutdown of a large plant item, this data could be reviewed in detail to establish just what caused the catastrophe.

Sequence of Events (SoE)

Another CMX option provides Sequence of Events (SoE) monitoring to 1 millisecond resolution. The delay from when the CMX module in the controller rack has the data and when the PCI card in the PC gets the data is reported to be 90 nano seconds, which is pretty close to real time.

If you need to know exactly how a complex piece of plant equipment works, this is the solution. Simply collect all the data at an extremely fast rate and then analyse that data later at your convenience - eg. Portal has a great feature of stacking multiple pens so the relationship between data can be clearly seen.

In machine control, many problems occur around sequence of operations, eg. Engineers can look at data and see that limit switches 1 and 2 both have fired, but because of the relatively infrequent updates, they may not be able to see the order in which the events occurred. By using CMX you now have a network that's fast enough to identify the sequence, so you can easily identify the problems.

CMX, HSDA & the SoE are further examples of GE Fanuc strengths in high-speed applications, GE Fanuc also offer numerous solutions including high performance I/O modules (not scan based) and embedded technology for high speed industrial Communications and Networking.

We have access to a demonstration rig fitted out with CMX technologies, if you are interested in seeing this technology in action, please let us know and we will arrange a demonstration of it.

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New Product - Proficy Change Management (PCM)

Proficy Change Management (PCM) is a client/server system with functionality focused on making your manufacturing environment more efficient by improving day-to-day operations and throughput. It also gives you detailed

tracking of your operations— being important in a business sense, as the high degree of tracking PCM provides is essential in regulated environments.

PCM gives you all the benefits of keeping the critical components your plant needs in order to run (files, programs, applications, etc.) in a secure, central location. Files maintained centrally on the PCM server are easily accessible in the event of a device failure, ensuring your operation is back up and running as quickly as possible.

PCM wraps around your existing software applications (programming software, development tools, etc) to automate, control & validate their usage.

The server is also the core storage for the PCM information, configuration, and product modules. It stores information about users and groups, the audit trail database, project scripts, and HTML graphical pages. This information is distributed to clients as required.

Version Control

Version control is one of the system's key pieces. It ensures that only one person makes changes at a time, and in archiving versions as changes are made.

Program locking allows only one user to modify a project at any given time. To make changes, a user must first check a project out. Once checked out, others may read locked copies of the project, but cannot update the server with changes. When the user finishes making changes, he or she checks the project back in. The server is updated, and others are then free to check the project out again.

Version control provides the ability to revert to previous versions. If unauthorised changes are made, for example, it is very easy to restore a previous version in order to keep your operation running. Version numbers are automatically assigned when revised versions are saved to the server. These versions can also be labeled appropriately so it is easy to locate the "Master Copy" or "Engineering Changes."

Audit Trails and Reports

Whenever a user logs on to PCM, checks out a project, runs software, and checks it back in, each of these events is logged. When a user checks changes in, it also allows entry of comments about those changes. The audit trail system also has configurable settings, allowing users to specify which information is logged—you turn off what you don't need to know about.

All audit information is logged in a database on the server, which can be accessed via the PCM report generator. The report generator allows you to sort and filter the information based on a combination of user, PC, project, and date.

Electronic Signatures

The Electronic Signature functionality helps gain further control over changes, and helps achieve regulatory compliance. Designed with the FDA's 21 CFR Part 11 in mind, it allows for an extra level of user accountability.

Access Control

The Access Control function in PCM allows you to control access to projects and devices in the system. Whenever a user logs on to PCM, a user ID and password are required. Based on logon information, you can control which projects users can access in the system.

Security is based on the group or groups to which users belong, and based on overall permissions, a user can be allowed or disallowed access to a project. Permissions for groups are also assigned based on which project type the user is accessing. For example, in a control application there may be a restriction to monitoring instead of on-line programming.

Partial administrator permissions can also be assigned to various users, allowing password changes, creation of new user accounts and new projects, etc. Overall, PCM's Access Control features help you reduce the number of errors that occur due to unauthorised access.

Scheduled Functions

The PCM Scheduler saves manpower from being wasted on repetitive tasks. Many spend numerous hours per month locating the latest databases for the purpose of backups, while others have no backup at all. In both cases, costs result from either wasted time or downtime.

The Scheduler allows you to automate PLC or device reads for the purpose of backing up what is running on devices. Another key function is the scheduled compare, which lets you compare logic running on a PLC with that of a master copy. If a mis-compare is found, you can be notified of the differences, or have PCM automatically take the appropriate action. Either way, results of compares are reported in audit trails.

The PCM Scheduler comes with scheduled load and compare events for popular PLCs including Allen-Bradley, Modicon, Siemens and of course GE Fanuc.

Because the Scheduler is script driven, you can actually use it to automate almost any 3rd party application: other applications can include reporting software versions on each client, reports can be automated, and email notifications can be sent. Applications such as iFIX (and other vendors HMI software), AutoCAD and popular Microsoft applications are supported out of the box.

Another of the Scheduler's key features is that it is distributed. The distributed Scheduler allows you centrally store events on the server, and have the actual tasks run on one or many clients. For example, you can use one client to compare all of the Modicon PLCs because it is connected to a Modbus Plus network, while another client handles Allen-Bradley devices.

HTML Interface & Plant Layout

The HTML or graphical plant layout allows you to customise end-user interfaces to match your plant's needs. This powerful point-and-click interface makes accessing projects and devices as easy as surfing the net. It helps you simplify the interface used by your end users, giving them access to only what they need-reducing errors and training.

The plant layout function allows you to organise projects logically, based on your facility's operation. It allows you to create a hierarchy of the areas in the plant, simplifying access to individual projects. Multiple layouts can also be created, giving access from different views to the same projects. This means the interface can be customised based on the type of user. The layouts are also permission based, so you can restrict which users have access to different layouts.

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IIC Address - Reminder

For those readers that would like to visit our office or courier goods to us, our address is:

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As we are still getting the occasional package sent to our old address, can you please check to see if you have our correct contact details on file.

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