



# InputOutput

## April 1995

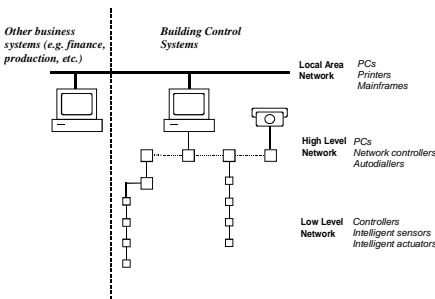
### *Round pegs in round holes*

All products have design criteria which limit their application. Sensible systems should use technology to make life easier for everyone - for the specifier, the installer and for the end user. In the area of communications, this is especially true.

All too often, communications technology is used inappropriately. We need to take a step back and position products into an appropriate slot, where they perform best rather than where they happen to end up.

### The 3-layer model

It's actually very simple. Take a look at practically any building today and you will generally find a **Local Area Network** (LAN) installed, providing communications between operating systems on PC's and to devices like printers and mainframes.



With powerful windowing software like Windows for Workgroups, Windows NT and OS/2, these LANs are rapidly becoming *de rigueur* in medium and large building installations. These networks are extremely efficient at passing around large 'chunks' of data such as data files. They operate at extremely high transmission rates. Because of this, many people see LANs as being the best way of linking different control systems together.

However, the technology used to gain access onto the LAN is aimed squarely at the computer market and is too expensive to build into control systems as standard. In addition, the networks are inefficient at handling relatively small amounts of data at frequent intervals (which is exactly the sort of data which is passed between systems). The connection cost, the bias towards large data transfers and the relatively short distances allowed between devices are just a few reasons why LANs are not suitable for integrating control systems, even if they are superb at linking PCs together.

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Within the control systems, a number of proprietary and standard field bus systems (such as *Echelon* and *BatiBUS*) have emerged. These **Low-Level Networks** (LLNs) have the ability to efficiently move very small amounts of data between controllers and intelligent points like sensors or switches. They are admirable at this low level, but there are moves to try and apply them to provide communications between control systems. In this position, they soon become overburdened, since their data transmission performance is not optimised for the relatively high demands of inter-system communications.

So if these 2 networks are not appropriate for integrating control systems, what is? The answer is a general-purpose **High-Level Network** (HLN) which must have a number of qualities :

**Connection cost** - it needs to have a low-cost of access, both for installers and for manufacturers.

**Efficiency** - although communications doesn't have to be lightning-fast, the network must be efficient at handling inter-system communications.

**Robustness** - the network will not only be run through the office (to link to displays) but will also have to reside in control panels (so it can connect to controllers).

**Distance** - the network may well be spread throughout a building or across a wide area site - often many kilometres in total.

**Flexibility** - the network must have the ability to handle all sorts of data, from text labels through to histories.

Don't put square pegs in round holes. Let the IT experts stick to *LAN* installation and let manufacturers select the best field bus to link their sensors and actuators to their controllers. And let's get integration done properly with the right tools for the job.

## New drivers

A host of new drivers have just been released for the Apex System, all available for upload from *The Shelf*, your friendly on-line autodial service.

The recently released **Compass** network has a driver available, allowing Apex applications to use the facilities of this fast, flexible *HLN*. A **Standard Object** driver is also available to communicate with the Points themselves. An Apex application called **CVIEW** is also available which assists in the setting up of Compass Points.

For security-oriented users, a driver for the **Tecton** Kramplex digital multiplexer has been developed, together with drivers for the **Fermax** and the **PAC International** 2100 access control systems. In addition, there is now a driver available for the **Vision Systems** VST10 video transmission system.

A driver has been released for the **IMTeleControl** UPS control and monitoring system.

Petrol pump monitoring - a niche marketplace - is now covered in part by a driver for the **Triscan** pump control system.

Drivers for the **JBus** network and devices have now been released, giving access to many industry-standard controls products in BMS, electrical monitoring and chiller systems. The first application of the driver has been for the **Trane** GCI chiller control system but the drivers are not limited to any particular manufacturers equipment.

The **ABB** SAMI GS frequency converter is now Apex-compatible, giving monitoring and control functions for this popular motor drive control system. The product is 'badged' by a number of OEM suppliers including **Alldales Drive Systems**.

Many fire systems and alarm units generate simple, read-only text messages, normally transmitted to a printer. In order to cover practically all of these, a **General Purpose Alarm** driver has been developed which gives extensive alarm handling facilities for Apex applications.

Did you know that it is possible to link Apex onto literally hundreds of different intelligent systems? A complete list of all drivers is always available for upload from **The Shelf** in Write (.WRI) format. It's in the *Documents* section under *Driver list*.

## STOP PRESS!

In the pipeline, there are drivers coming through for the **Alfa-Laval** SattControl PLC, **Menvier** security system, **Dunham-Bush** chiller control system, **Staefa** NITEL and NCRS building management systems and several others. Many of these will be appearing over the next few weeks, so dial into **The Shelf** and see what's going on!

Of course, future issues of **InputOutput** will carry all the latest news.

## Apex System enhancement

Apex has been enhanced with a number of new features, including access to a more extended palette of colours. Until now, when using Windows with a 256-colour VGA card, Apex supported only 32 colours per window. While this was adequate for schematic diagrams, it often limited the presentation of more 'photographic' images.

Therefore, Apex 1.43 is now available which allows up to 240 colours on a single window. This is further enhanced with a 'palette load' facility, allowing a particular palette to be loaded from a bitmap file.

**The Shelf** has the latest versions of the Apex System available for you to upload.

## Ask the Doctor

Dr Mortido is your very own 'agony uncle', here to make a bridge over your troubled waters. Open wide. It won't hurt a bit.

Dear Dr Mortido

*I am using a LaserJet printer with my Apex alarm handler but I keep getting complete pages when I try to output a single line of alarm data. Help!*

*J. Shortsword, Wyoming*

Relax, Mr Shortsword! There is a simple way of tackling this. Windows is basically 'page' oriented, making it great for word processors and spreadsheets, but too limiting when you want to control the amount of output. That's why there's an Apex driver called **IBMLPT** which allows you to use the **CommTx()** function (as if the printer were a terminal device) to 'transmit' the alarm message as a single line out of the parallel port to the printer. You can even add printer 'control characters' (like CR and LF or even TAB) using the **NumToChar()** function. Easy peasy!

## Microsoft serial driver

Microsoft have released an upgraded version of their SERIAL.386 driver, primarily for Pentiums and any serial cards fitted with the 16550 UART. If you are experiencing any 'lock out' problems in communications generally, it may be worth upgrading.

A complete software upgrade is available on **The Shelf**.

Dear Dr Mortido

*Whatever happened to those 80's BMS controls gurus, Casey and De'Ath?*

*D. Dagger, W. Sussex*

This question has been asked so often recently that I decided to do a full global sfp.dbsrch through Worldweb via IntelSat on these increasingly elusive 'deviation divas' - several entries came back :

o mcdeath : snuff-rap-artist, detroit, usa	o
o [mcdeath@ziprecs.com.usa]	o
o mcdeath : bakers-confectioners,	o
o baguette-controls, guernsey, uk	o
o [mcdeath@bigbuns.com.uk]	o
o tcasey : nags'r'us, equine-supplies,	o
o horse-dentistry, west sussex, uk	o
o [tcasey@nagpeg.com.uk]	o

Mind you, I had a 'Bring-a-rope' Sixties curry revival evening recently with a few close chums and nobody had heard of either of them. Make of it what you will.

Dear Dr Mortido

*Have you got any suggestions for controlling the movement of CCTV cameras with Apex? I've tried using the mouse position but it's a bit difficult to control.*

*Johnny Scalpel, Muswell Hill*

That old chestnut, eh, Johnny? Apart from getting positions from a mouse, you might find that using a touch screen is a bit easier - you probably wouldn't even change your Apex application. Alternatively, you could use the *JOYSTK* driver to get positions from a standard joystick connected to the PC game port - it's OK (and very cheap!), if a bit on the 'coarse' side. Or try installing a PC LabCard in your computer and getting the positions from a serious precision joystick using the high-resolution analogue inputs on the card. If you need any details on connecting up to one of these, give me a call and I'll gladly pass on my extensive 'yoke-oriented' knowledge.

Dear Dr Mortido

*I've got 2 ropes of unequal thickness. How would I go about tying them together? By the way - better than Viz, InputOutput is!*

*Dr. X. Stiletto, Darlington*

Sorry, Dr Stiletto but there really isn't room this month to go into detail in what is, after all, a fascinating area. I may have to hold this one over for another time. From one doctor to another, that's life (or maybe, that's not)!

Mortido

P.S. Love the rhyme, but I still think Viz is better.

*If you've got any real belters on displays, comms or ingenious uses for Marmite, why not write to the good doctor at the address below. There's a wad of crisp fivers for any questions which can be published without fear of litigation. Dr Mortido regrets that he is not able to answer any questions personally because he doesn't really exist.*

## Pearls of wisdom

A dark shirt with white slacks rarely makes a positive fashion statement.

Always keep a spare fan belt in your handbag in case you ladder your tights.

Fat? Why not employ a grenade-juggler and a fire-eater to walk in front and behind you to distract people away from your excessive size?

Working in a live high-voltage control panel is a handy alternative to powerful prescription laxatives.

Programmers. Eating regularly and spending even a little time outdoors can often prevent that pasty, 'train-spotter' look. Getting rid of those open-toed sandals also helps shed that 'mainframe-lover' image.

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